

American Aviation

The Independent
Voice of
American Aeronautics

15c A Copy

Vol. 3 No. 10

Published Twice a Month

October 15, 1939

\$3.00 a Year

Fortnightly Review

On Parade

THE civil pilot training program now being launched by the Civil Aeronautics Authority reminds us of a lad who dons his first pair of long trousers to attend his first formal birthday party at his girl's house.

He thinks he's grown up but he is most awfully conscious of himself. He knows that if he stutters and hems and haws when his hostess meets him at the door he will be subject to ridicule. He knows that if he drops his spoon when the ice cream comes around he'll be further marked as a social misfit. He fears his trousers aren't the right length, that something will slip. He wants so hard to make a good impression socially because his hostess is a very sweet little thing and he would like to have her as his "steady". He is nervous because he knows he's on parade.

So is the pilot training program on parade. In a sense it's the biggest thing in aviation right now. It's just about the most important thing that has happened in the realm of private flying. Non-scheduled aviation goes on parade before thousands of college youth, before the nation's educational system, before Congress, and before the fixed base operator, manufacturers and others who comprise this branch of the aviation industry.

If the program is a success, as we think it will be, the beneficiaries will be the national defense, the airports, the airplane manufacturers, the oil companies, the fixed base operators, and all others directly affected by any expansion of private flying. A good safety record is most important of all, for even minor accidents are played up when flying is on parade.

(Turn to page 16)

South American Expansion On; PAA Places Big Plane Orders

P O NOT TO START ANY MORE FEEDERS

Feels It Should Not Conflict With CAA; Now It's Up to Would-be Operators

To avoid the prospect of having two federal agencies authorizing airline routes, the Post Office Dept. has decided to bow out of airline picture so far as instituting new routes is concerned, it has been learned in Washington. Although the Post Office Dept. could, under existing law, contract for experimental feeder routes without the necessity of having such routes approved by the Civil Aeronautics Authority, the P O has decided to relinquish any of its interests in new routes in favor of the CAA.

The one exception is carriage of mail by air on five star routes which have been authorized by Congress. Only one of these routes is now in the process of being awarded and no plans have been made for advertising of bids on the other four. All star routes are short and call for carrying of all classes of mail where other forms of transportation are not easily available. The one star route to be contracted for

(Turn to page 4, col. 1)

West Coast Mfr.



J. H. Kindelberger
President of North American Aviation Inc., Inglewood, Cal., one of the companies busiest on foreign and domestic orders.

Aviation Mfg. Corp Selects Nashville for First Plane Factory in Southeast

Plans for the first large airplane manufacturing plant in the Southeast was announced Oct. 5 by W. H. Beal, president of Aviation Manufacturing Corp., wholly owned subsidiary of Aviation Corp. Mr. Beal stated that his company was building a \$250,000 factory in Nashville, Tenn., and that construction would be completed in 90 days. Approximately 1,000 employees will be hired.

Although the southeastern section of the country has been considered for plant sites from time to time, this is the first major move into this area. Nashville is not far from the heart of the aluminum source of the U. S.

The new plant will occupy 125,000 square feet of manufacturing floor space, located on the company's 36-acre tract adjoining Nashville Airport.

"Our decision to locate another factory at Nashville was due to a pressing need for additional manufacturing facilities," Mr. Beal said. "Nashville

was selected after a careful study and survey was made due to its inland location. There seems to be a definite trend of opinion that new aircraft manufacturing units should be located away from the coastal regions. We also found after an exhaustive survey that the weather at Nashville is ideal for this type of manufacturing."

Aviation Manufacturing Corp. has three other manufacturing plants. They are Vultee Aircraft, Downey, Cal., in the Los Angeles area; Lycoming Division, at Williamsport, Pa., where airplane engines and propellers are manufactured; and the Stinson Aircraft Division at Wayne, Mich. The companies manufacture both military and commercial planes, ranging from attack bombers to the popular-priced Stinson 105 for the private owner.

The company has not stated what types of planes will be built at Nashville.

Congress to Get PO Request for Special Mail Appropriations

THE comprehensive drive to strengthen U. S. aviation in Central and South America got underway in October with two significant developments.

The first was the announcement by Pan American Airways of a \$6,000,000 plane-purchasing program to provide equipment for additional services in South America.

The second was the authoritative report from the Post Office Dept. of plans for requesting special appropriations of about \$2,500,000 for mail pay for increased frequencies to South America as soon as Congress begins its regular sessions.

Expansion of U. S.-operated airline services is the first of a series of large-scale activities planned to penetrate all phases of U. S. aviation in the Pan American nations. In the last World War U. S. trade took tremendous jumps ahead and U. S. aviation interests, with the wholehearted support of government agencies, are planning to take quick advantage of the European war situation in the present crisis.

Hence the Post Office Dept. will not wait for the 1941 fiscal appropriations but will ask Congress for immediate action. Coupled with this plan is Pan American's large purchases of aircraft, one of the largest single orders on record.

The main plan is to increase service down both coasts of South America by at least one trip a week. Pan American currently operates two trips weekly from Miami to Buenos Aires via Rio de Janeiro down the east coast and two trips from Miami to Buenos Aires down the west coast. Utilizing existing frequencies, the plan would be to have three trips to Buenos Aires from Miami down both coasts. Three trips from Brownsville to the Canal Zone would tie in with the west coast flights, giving a well-rounded service. It also is possible that Pan Am's operations across the top of South America may be improved.

The Post Office has not said what the cost of such additional frequency will be, but it is known that at present rates and on 100% performance, three trips down each coast from Miami would cost close to \$2,500,000 more per yr. The department feels that such

(Turn to page 4, col. 3)



Planes and pilots the world over rely on PESCO products

In the forward march of Aviation, PESCO engineering plays a major part. Most of the recent outstanding achievements were made with PESCO equipped planes . . . Even more significant is the fact that day in and

day out PESCO products are performing with dependability on scheduled transports of the major airlines, and are standard equipment on the finest commercial, military and private craft the world over.

AIRPLANES PESCO EQUIPPED

Barkley-Grow	Howard
Beech	Lockheed
Bell	Martin
Bellanca	North American
Boeing	Northrop
Brewster	Seversky
Chance Vought	Sikorsky
Consolidated	Spartan
Curtiss-Wright	Stearman
Douglass	Stinson
Fairchild	Vultee
Grumman	Waco
	Hall Aluminum

PILOTS AND THEIR ACHIEVEMENTS made with PESCO products

AL WILLIAMS—Aerobatic exhibitions
HOWARD HUGHES— Record round-the-world flight
ROSCOE TURNER— Bendix & Thompson winner
MERRILL and LAMBIE— New York to London and return
MAJOR ALEX DE SEVERSKY— Speed record for amphibians
FRANK FULLER— Transcontinental and Bendix Winner
JACQUELINE COCHRAN— Speed record for women and Bendix Winner
TOMLINSON and BARTLES— Transport speed record
—and many others

AIRLINES USING PESCO EQUIPMENT

American	Mid-Continent
American Export	Northwest
Boston-Maine	Pan American
Braniff	P. C. A.
Chicago & Southern	TWA
Delta	United
Eastern	Western Air Express

FOREIGN

Trans Canadian	A. B. Aero Transport
Inter-Island	Polakie Linje Lofnise
Royal Dutch	Aeroplane Trollhattan
	Australian National

PESCO PRODUCTS HAVE WORLD-WIDE DISTRIBUTION

The Pesco Sales and Service organization covers both hemispheres

UNITED STATES

West Coast—Air Supply Company 5959 W. 3rd Street, Los Angeles, Cal.
Mid West—Aircraft Steel & Supply Co. 419 N. Water Street, Wichita, Kansas
Mid West—Supply Division, Inc. Lambert Field, Robertson, Missouri
East—Mr. Fred R. Marshall 2904 Ridge Avenue, Dayton, Ohio
East Coast—Mr. Hank Miller 270 Longstreet Avenue, Bronx, N. Y.
East Coast—Mr. George A. Gray Munsey Bldg., Washington, D. C.

LICENSED MANUFACTURERS

BRITISH DOMINIONS
The Plessey Company, Ltd., Pesco Pump Division, Vicarage Lane Ilford, Essex, England

CANADIAN AGENTS

Canadian Pratt & Whitney Aircraft Co., Ltd. Longueuil, P. Q., Canada

EXPORT AGENTS

South America—Aircraft Export Corporation 30 Rockefeller Plaza, New York, New York
Roumania, Poland & Turkey—U. S. Ordnance Engineers, Inc., 2200 Scranton Rd., Cleveland, O.
Netherlands—N. V. Technisch Bureau, Ligtvoet & Besancon, Juliana van Stolberglaan 30, 'S-Gravenhage Holland
Sweden—System Paulin Aktiebolag, Burger Jarlsgatan 6, Stockholm, Sweden
Belgium—Rene Hedo, 686 Chaussee de Waterloo, Bruxelles, Belgium
Orient (China)—The Intercontinent Corporation 30 Rockefeller Plaza, New York, New York



PUMP ENGINEERING SERVICE CORPORATION

DIVISION BORG-WARNER CORPORATION

12910 TAFT AVENUE

CLEVELAND, OHIO, U. S. A.



SEES PLASTIC GAINS

Col. Clark Visits Wright Field for Hughes Aircraft Corp.

Development of the plastic plane is continuing steadily, but it will be some time yet before it will be ready for mass production, Col. V. E. Clark, designer of the duramold plastic airplane built by Clark Aircraft Corp., told newspapermen in Dayton, O., late in September.

"I am not saying that the plastic planes will ever put the all-metal type of airplane construction out of the picture," he said. "There is plenty of room for both of these construction methods. But eventually they will provide one answer to the mass production method of airplane manufacture."

Col. Clark visited Dayton as a representative of Hughes Aircraft Co. of Burbank, Cal., of which Howard Hughes is president. He also is acting in a consulting capacity to Clark Aircraft Co., which has offices at Hagerstown, Md. The plastic plane is now being tested on Long Island.

Multi-Pitch Prop
Tested for Navy

A controllable multi-pitch propeller with blade angles adjusted by a mechanical motor powered by a plane's engine shaft recently passed government tests at Wright Field. The propeller, according to its designer, Emil A. Briner, mechanical engineer and president of the Aero-Engineering Corp. of East Orange, N. J., can traverse the entire pitch range in less than 10 seconds, and unlike some other types capable of only several positions, can be adjusted speedily to any angle required by flight conditions. Further, Briner points out, the propeller is continually self-locked at any position and speed, a valuable safety feature.

The direct connection to the engine possible without being geared down is described as an unusual characteristic of the "prop," and elimination of the reduction gear, which normally weighs from 50 to 100 pounds, is indicated as making possible better pay loads. At Wright Field the propeller was tested for 100 hours in direct connection at full power to a Wright Cyclone 700-hp. engine. It was whirled at 1,400 hp.

The tests were made in behalf of the Navy which has purchased two propellers from Briner, who states that his mechanism probably will soon be manufactured in the New York area by an undisclosed corporation.

Western Flying Change

Selby Calkins, until recently aviation editor of the *Hollywood Citizen*, has accepted the post of editor of *Western Flying* magazine, Los Angeles, Cal. Former editor, Robert Pritchard will become director of public relations for Glenn L. Martin Co., Baltimore.

Bombs Stop Lava Flow

Aerial bombardment is an effective method of stopping the destructive effects of lava flow from volcanoes, the National Parks Service reports, following study of holes left by 20 bombs dropped upon erupting Mauna Loa in Hawaii by U. S. Army planes in 1935. Bomb explosions released pressure of gases behind the lava and slowed down its flow, it is explained.

Calendar

- Oct. 15—Official Dedication of New York Municipal Airport (North Beach).
- Oct. 15—Air Show at McGhee Tyson Field, Knoxville, Tenn.
- Oct. 16-20—National Safety Congress and Exposition, Atlantic City.
- Oct. 21-22—SPA Fall Meeting, Hotel Traymore, Atlantic City.
- Oct. 26-27—SAE Transportation & Maintenance Meeting, Coronado Hotel, St. Louis.
- Nov. 3-7—Annual Convention, Aeronautical Medical Association, Hollywood-by-the-Sea, Fla.
- Nov. 4—N. Y. & N. J. 99's Dinner Dance, Waldorf-Astoria Hotel, New York.
- Dec. 1-3—Louisiana's 2nd Annual Aircraft Industries Exhibit, Municipal Airport, New Orleans.
- Dec. 7-8—Kansas State Aviation Association, Annual Meeting, Wichita.
- Dec. 16—I. Ae. S. Wright Brothers Lecture, New York.
- Dec. 27-Jan. 2—AAAS Winter Meeting, Columbus, O.
- Jan. 5-7—All-American Air Maneuvers, Miami.
- Jan. 10-12—NAA's Winter Meeting, New Orleans.
- Jan. 24-26—8th Annual Meeting, I. Ae. S. Apr. 26-28—Air Congress of America, Southwest Division, Tulsa.

Navy Gets Air Base Site

From Florida and War Dept.

Transfer of the Florida National Guard reservation at Camp Foster, near Jacksonville, to the Navy Dept. for the establishment of a new Naval Air Base has been announced by Secretary of War Harry H. Woodring.

The reservation consists of 300 acres formerly owned by the state and 683 acres, title to which was vested in the War Dept. Transfer of title to the state-owned land was effected by agreement of the Duval County Air Base Authority to pay \$400,000 to the state.

CHICAGO'S HOPES

Association of Commerce Seeks Light-plane Plants; Finds Military Mfrs. Tied Down

Chicago's hopes of becoming as prominent in aircraft activities as Detroit is in the automotive world very likely lies in development of light aircraft and in the aircraft engine and accessories fields, it is disclosed by Denis Mulligan, aviation expert of the Chicago Association of Commerce.

"Since under the Greater Chicago Plan, Chicago seeks to make itself an important scene of aviation manufacture, it should give immediate consideration to the possibilities in the small plane field," he said. "My investigations during the past three weeks have revealed that the present producers of big planes will not consider moving their plants while the war scare continues. Too many of them have such sizeable orders for military planes from our own and other governments that they can not logically be expected to change their bases of operations before 1941, at the earliest."

Reps. to Alaska

Reps. J. Buell Snyder (D., Pa.) and Joe Starnes (D., Ala.) of the subcommittee of the House Appropriations Committee, accompanied by Maj. Arthur R. Wilson, F. A., general staff, and Capt. C. H. Deerwester and Lieut. G. H. Austin of the Air Corps, left on Sept. 28 on an observation trip to scenes of proposed air activities at Fairbanks and Anchorage, Alaska.

Vermilya Appointed

Wright "Ike" Vermilya, energetic booster of aviation in Florida, has been appointed director of aviation for Palm Beach County. He is Florida governor of the NAA, president of the Palm Beach Aero Corp. and has been for many years one of the nation's leading fixed base operators.

Continental Head



C. Reese

Who recently was elected president of Continental Motors Corp., Detroit.

TENNESSEE GETS TROPHY

Lieut. Comdr. Young Will Receive Award for Unit's Record During 1939

The aviation unit of the USS *Tennessee* is the 1939 winner of the annual Rear Admiral William A. Moffett Memorial Trophy awarded for flying the greatest number of hours during the fiscal year with the fewest injuries to personnel and least damage to material. Forty-six battleships and cruiser based aviation units were in competition for the trophy during the year.

Lieut. Comdr. Rufus C. Young, Jr., was the senior aviator of the *Tennessee* unit during the fiscal year 1939, and, under rules laid down for the award, will receive the trophy, a large silver plaque mounted on a walnut base. The trophy is in memory of Rear Adm. William A. Moffett, former chief of the Navy Bureau of Aeronautics, who for many years devoted his time and energy to the interests of naval aviation.

O. K. Baltimore Airport

After many delays, completion of Baltimore's new airport long under construction, is nearer with authorization by Clinton M. Hester, CAA Administrator, of a WPA grant of \$570,000 for paving of runways. For some time the authorization was held up pending determination of the effect of Pan American's lease at the airport. PAA's lease granted certain exclusive privileges which automatically prevented the use of federal funds for airport improvement, but obstacles now have been removed to comply with federal law. The airport project has been costly, added to the fact that filled in land has not settled much after several years.

Robbins With Burbank Firm

Hugh C. Robbins, former head of H. C. Robbins Co., Cleveland distributor of Waco planes which sold out to the Lane Aviation Corp. of Columbus, O., in August, is now associated with Continental Aeronautic Corp. of Burbank, Cal. Robbins had been dealer and distributor for Waco Aircraft Co. for the last 15 years.

Querl Leaves LA CofC

E. Paul Querl, since 1934 manager of the aviation department, Los Angeles Chamber of Commerce, has resigned to become manager of the industrial department of the Chicago Association of Commerce, effective Oct. 15.

Cross-Country Race
To Miami Maneuvers
Announced by Pullen

Plans for a cross-country air race to Miami, Jan. 5, from cities 1,000 or more miles distant, with cash prizes totaling \$8,000 and a Bernarr Macfadden trophy to the winner, have been disclosed by Claude E. Pullen, president of Miami All-American Air Maneuvers to be staged Jan. 5-7. Division of prize money, Pullen said, will be \$4,000 to the winner, \$2,500 for second place, and \$1,000 for third. In addition, \$100 goes to each of the next five entrants to finish the race.

Winner of the race will be determined on a straight mph. flying time basis with as yet undetermined limitations on total elapsed time. Contest rules, as yet incomplete, provide only for planes and engines of approved type certificate rating. No added restrictions will be placed on type of plane or engine other than possible rules banning the entry of lightplanes of 40-65 hp.

The Macfadden race for 1940 replaces the former New York-to-Miami race which last year was won by Max Constant of New York who flew a Beechcraft, owned by Jacqueline Cochran, in a total elapsed time of 5 hrs. 43 min., 39 sec., for an average speed of 204.277 mph. Prizes last year totaled \$3,500.

SPY PRECAUTIONS GROW

Aircraft Companies Keep Close Tab on Employees to Protect Men and Materials

North American Aviation Inc., Lockheed Aircraft Corp., the Vultee Division of Aviation Manufacturing Corp., and Douglas Aircraft Co. Inc. are tightening down on their personnel to mitigate possibilities of espionage and sabotage, recent measures indicate.

At the Lockheed plant every man must be photographed, fingerprinted, and his background checked. Reports are sent to the Federal Bureau of Investigation office at Washington, D. C.

Guards are stationed at all gates and employees are checked "in" and "out." Even their lunchkits are inspected daily, and their identification buttons restrict them to their own departments. In charge of this work is John Hanson, former FBI chief at Los Angeles.

North American follows much the same procedure. At the Douglas plant, where former Los Angeles Police Chief James E. Davis is personnel inspection head, "thorough safeguards" have been taken to protect men and materials—and to "guard against interruptions." Army, Navy and FBI agents also have been exerting extra efforts to check aircraft factory personnel and methods.

SPA Meets Oct. 21-22

The Sportsman Pilots Association's fall membership meeting will be held Oct. 21-22 at Atlantic City, N. J., C. H. Warrington, SPA secretary, has announced. A large attendance is expected, inasmuch as winter cruise plans are to be discussed.

Catron Leaves Tenn. Post

Lieut. William Catron has resigned as state director of aeronautics for Tennessee to become an inspector for the CAA.

'Bombing' for Churches

A new slant on handbill "bombing" was demonstrated Sept. 30 in Springfield, Ill., when a group of private pilots flew over the city dropping handbills urging church loyalty and attendance at Rally Day services the next day.

Seversky Fighters In Army Maneuvers



These Army Air Corps Seversky P-35's, single seat fighters, were photographed recently in maneuvers above the clouds. Each of the all-metal monoplanes is powered with a Pratt & Whitney Wasp and has a manually controlled constant speed propeller, monocoque fuselage and cantilever wings and tail surfaces. (Army Air Corps Photo).

Hughes' Boeing Inactive

Howard Hughes' Boeing Stratoliner had not flown for two weeks prior to the weekend of Oct. 7, as it was awaiting mechanical adjustments in its hangar at Glendale's (Cal.) Grand Central Air Terminal. It is understood that Hughes has abandoned any thoughts of a European flight.

Feeders

(Continued from page 1)

shortly is between Port Clinton, Kelly's Island, Put-in-Bay, Middle Bass and Isle St. George, all in Ohio.

Except for these star routes, the Post Office Dept. will not initiate any more feeder routes such as the experimental pick-up contract awarded to All American Aviation Inc., in Pennsylvania and West Virginia.

Thus feeder routes have been placed in the same category as full-scale airline operations in that applications for operating feeders with a certificate of convenience and necessity must be filed with the CAA. Hearings must be held under the same procedures applicable to applications for airline routes, regardless of whether the operator plans to carry passengers.

To date only one application has been filed for what might be termed a feeder route. This is the application of Ray Wilson, of Denver, Col., for a certificate to operate a daily round-trip out of Denver to Grand Junction, Durango, Alamo and other points in the isolated and mountainous sections of Colorado. The date has not yet been set for a hearing.

The CAA has no power to initiate new routes, regardless of what category, but the CAA is understood to be receptive to applications for feeder lines if the prospective operators can show public need. It is understood that the Post Office Dept. is more than willing to cooperate with the CAA in setting up feeders, but has decided in the interests of efficiency and harmony to await decisions by the CAA.

Last year the P O requested funds for the establishment of feeders but Congress lopped a million dollars off the air mail budget. By withdrawing from the picture the future of feeder lines now rests with operators who want to launch such lines and who must file formal applications with the CAA.

NACA Reports

The National Advisory Committee for Aeronautics, Navy Bldg., Washington, D. C., has listed the following technical reports, notes and memos available. Quantities are limited.

TR 667. Determination of the profile drag of an airplane wing in flight at high Reynolds numbers, by Joseph Bicknell.

TR 670. Tensile elastic properties of 18-8 chromium-nickel steel as affected by plastic deformation, by D. J. McAdam, Jr. and R. W. Mebs.

TN 728. Combined beam-column stresses of aluminum-alloy channel sections, by R. Gottlieb, T. M. Thompson and E. C. Witt.

TN 727. A flight investigation of the distribution of ice-inhibiting fluids on a propeller blade, by Lewis A. Rodert.

TN 728. Wind-tunnel investigation of an NACA 23021 airfoil with two arrangements of a 40%-chord slotted flap, by Frank Duschik.

TN 729. An instrument for estimating tautness of doped fabrics on aircraft, by Gordon M. Kilne and Herbert F. Schiefer.

TN 730. Wind-tunnel investigation of effect of yaw on lateral-stability characteristics. II—rectangular NACA 23012 wing with a circular fuselage and a fin, by M. J. Bamber and R. O. House.

TM 907. Dynamic stability of a helicopter with hinged rotor blades, by K. Hohenemser. (From Ingenieur-Archiv, vol. 9, Dec. 1938).

TM 908. Two-stroke-cycle engines with unsymmetrical control diagram (supercharged engines), by J. Zeman. (Automobiltechnische Zeitschrift, vol. 41, no. 16, Aug. 25, 1938).

TM 909. The theory of contra-vanes applied to the propeller, by Albert Betz. (From Ingenieur-Archiv, vol. 9, no. 6, Dec. 1938).

TM 910. Measurements on a low-wing model in the rotating jet and comparison with flight measurements, by W. Bader. (From Luftfahrtforschung, vol. 16, no. 2, Feb. 20, 1939).

TM 911. Knocking in the Otto-cycle engine, by H. Weinhart. (From Luftfahrtforschung, vol. 16, no. 2, Feb. 20, 1939).

Airsurance Gain

An Airsurance increase of 230% for July 1939 over July 1938 and 330% for Aug. 1939 over Aug. 1938 has been announced by U. S. Aviation Underwriters Inc., New York. The increase resulted from the reduced rates of \$1.80 per \$1,000 to \$1.40 per \$1,000 per year for individuals. The rates are based on the airlines safety record. Lower rates of \$1.10 per \$1,000 for groups and organizations also are offered. The new maximum \$25,000 annual no-age limit, no-physical examination Airsurance policy provides unlimited flying as a passenger on named commercial scheduled airlines in North and Latin America, it was reported.

HEATER ANNOUNCED

Solar Introduces Airmax Standardized Equipment

Solar Aircraft Co., San Diego, Cal., has announced the production of Airmax heating equipment which, through standardization of the heating units which comprise the completely automatic heating, may be varied through the expedient of ordering to requirements. In the boilers only a single size unit is produced, one rated at 40,000 btu. per hr. capacity. A similar radiator size is produced. To secure additional heat to meet larger requirements, as many as four boilers may be hooked in series. A single feed-water pump can handle the output of some six boiler units, or a total of 240,000 btu. per hr.

The Airmax operates on an on-and-off switch, and it automatically draws off all water from the system into a sump when operation ceases. A thermostat controls heat output of the boilers and maintains an even cabin temperature. Including water, the 40,000 btu. Airmax weighs approximately 21 lbs. This size system installed in a two-place cabin is said to eliminate necessity for high-flying or winter-flying togs.

Fisherman's Story

Fishermen operating off the coast of Iceland are using observation planes with success, flying at an altitude of from 3,000 to 4,500 ft. in good weather and from 600 to 1,500 ft. in bad weather, it has been reported to the Dept. of Commerce by Asst. Trade Commissioner Paul H. Pearson, Copenhagen. At an altitude of 4,500 ft. herring shoals are observed at a distance of from nine to 12 miles, the report said. Location of a herring shoal is indicated to fishing boats by the pilot pointing the nose of his plane in the direction of the shoal and rocking the plane from side to side. Immediate location is shown by a dive followed by a steep climb.

Port Board Members Named

Moscow, Ida.—R. D. Tucker of Pullman has been elected chairman of the Pullman-Moscow regional airport board; Mayor E. B. Parker of Pullman was named vice-chairman and Jack Hayden, Moscow, was chosen secretary.

South American Expansion

(Continued from page 1)

expenditure would be well justified, so entrenching Pan Am in South America that when foreign operators again turn to that territory after the war they will find the situation tied up.

If it was not for the general understanding that the present extra session of Congress will be devoted exclusively to neutrality legislation, it is probable that the P. O. requests would have been submitted before January.

Guarantee that Pan Am will be able to operate any service the P. O. may designate is seen in the company's announcement that it is purchasing six new improved Boeing 314 Clippers, 10 Douglas DC-3 landplanes, together with two DC-3's for Pan American-Grace. The four Boeing 307 Stratoliners, ordered some time ago, also will be included in the operating plan. The new fleet of multi-engined aircraft will represent an investment of approximately \$6,000,000.

One of the most important phases of the operations program, and one which meets with the whole-hearted approval of the Post Office, is the company's plan to cut present schedules of six days to Buenos Aires via Rio, and 4½ days via Panama down the west coast to four days via either coast.

"Under the new program, land transport operation will be extended over certain sections of the international routes on the South American continent," Pan Am states. "Four-engined clippers will take over all transcaribbean and West Indies schedules. The transcaribbean fleet of clippers will be augmented by the four-engine Sikorsky flying boats which the landplanes will release from the east coast of South America and by the transfer of the present Bermuda Clipper from the Atlantic and the larger Martin-built clippers from the Pacific. The shift to landplane operations on the southern continent, together with the simultaneous development of larger airports, will pave the way for early institution of day-and-night flying over the main trunk routes.

"The effect of the new program will be to speed up schedules on the through services and to increase, substantially, the lines' carrying capacity, not only through the use of larger land transports but also by the elimination of traffic 'bottle-necks' now caused by the use of several types of aircraft of different capacities on the connecting schedules. The concentration of four-

engine clipper ships in the Caribbean will considerably improve the traffic capacity on the connecting links between North and South America. It also will make available needed equipment for the planned addition of new schedules to augment the present North-to-South America services. The release of smaller, but equally modern DC-2 and Sikorsky S-43 aircraft—with which certain sections of the international routes, to be taken over by the larger DC-3's, are now operated—will re-equip Pan American's domestic subsidiary companies in Brazil and Mexico with aircraft the equal of or superior to existing competitive aircraft. They will further substantially increase traffic capacity on these important domestic lines which serve as feeders for the main international trunk routes."

Not included in Pan Am's announcement, but known to be under consideration, is the possibility that with the advent of DC-3 equipment on trips down South America's west coast, flights may be made across Brazil direct from Para to Rio, instead of around the "hump."

Other aspects of the plan include early filing of an application for a route between Los Angeles and Mexico City. This line is now operated by Cia. Mexicana de Aviacion, a Pan Am Mexican company. Probabilities are that the Post Office will place mail on the line if it is established, despite the fact that satisfactory service is now afforded through Brownsville.

On the Atlantic, Pan Am expects to have sufficient equipment to operate four schedules weekly, and expects to conduct high altitude experimental flights with the Boeing 307's. The latter type ship also will be used on an "all American" express service between Seattle and Fairbanks, "facilities for which are dependent upon completion of the government's airport program for the Territory." In the Pacific, additional equipment will be provided for "eventual institution" of regular weekly service between California and Australasia, while 314's are to be used on all schedules through to the Orient.

Pan Am had not intended to announce its plan until some time in 1940 but, thinking in the same vein as the Post Office, decided to tighten its hold in South America while foreign services are curtailed.



From Alcock and Brown... to Tomorrow

Pioneering New Skypaths



In one of the most modern of plants, with atmosphere completely controlled, Pioneer technicians and craftsmen work to closest practical limits of precision, with the finest production and inspection equipment science has developed.

Since those hardy gentlemen, Alcock and Brown, flew the Atlantic in 1919, the careful men who devise and build Pioneer Aircraft Instruments have been steadily at work for the advancement of aviation.

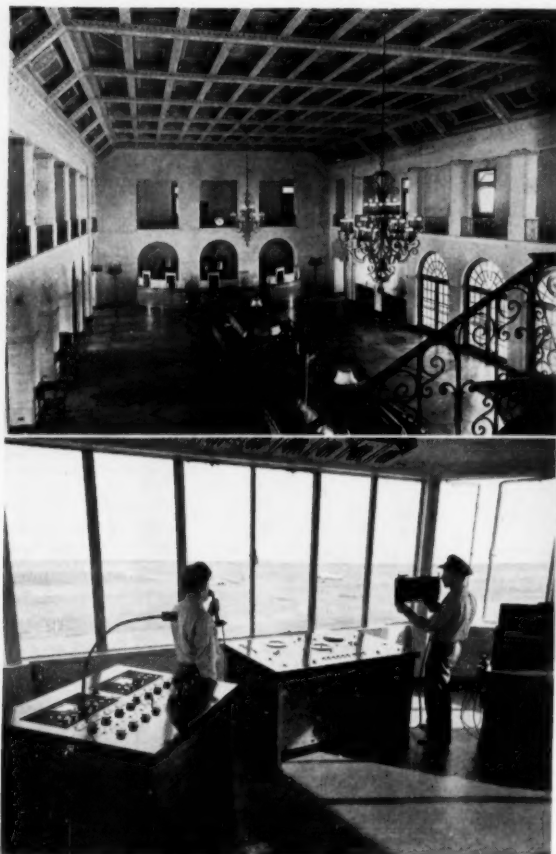
Through these eventful twenty years, new and more sensitive, more versatile, more reliable Pioneer Instruments have come from the laboratory to take their places on the instrument panels of aircraft the world over. Few men, of the flying thousands who place their trust in the vital information these simple black-and-white dials convey, can possibly know what goes on beneath the glass. The name, Pioneer, which each instrument bears, is their only clue to the quality, the scientific precision, the very high degree of reliability represented. Seemingly it is sufficient.

PIONEER INSTRUMENT

DIVISION OF BENDIX AVIATION CORPORATION

BENDIX, NEW JERSEY

San Francisco Builds A Super Air Terminal



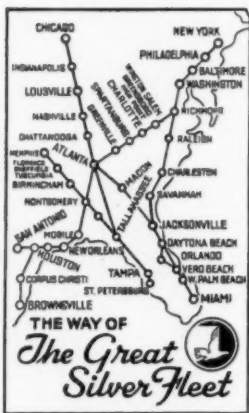
One of the nation's busiest places this year is San Francisco's Municipal Airport on San Francisco Bay. No less than 1,300,000 cubic yards of earth are being transplanted from a nearby mountain to extend the fill far out into the bay. When the \$5,750,000 airport is completed, it will have 5,500- and 6,000 foot runways. Work has progressed so rapidly, with an endless chain of trucks moving back and forth, that the field will be in use next year. It will rate as one of the nation's finest. Photo-drawing above shows master plan, while at left are photos of the interior of the spacious and tastefully decorated administration building—one of the most beautiful in America—and of the control tower which was designed and laid out by San Francisco's able airport manager, Mike Doolin. A \$330,000 Coast Guard station with living quarters for 40 men and six officers, is being built at the north end of the field. Elaborate seaplane facilities will be provided.

This Winter . . .

Americans will 'Discover' The Americas on Wings

● Two Continents and Numerous Isles of Enchantment Await Travellers Who Have Struck Trans-oceanic Travel From Their Vacation Agenda.

Eastern Air Lines is Strategically Situated to Bring the Most Alluring, Romantic, Most Deeply-Satisfying Resort Locales of Two Continents to You Quickly.



The Great Silver Fleet provides direct service from Chicago and New York to both coasts of Florida: Tallahassee, Tampa, Jacksonville, Orlando, Daytona Beach, West Palm Beach and Miami are regular ports of call.

Texas Gulf Coast winter playground states know our silver wings.

And direct service from New York to Brownsville, Tex. on the International Border, is daily routine on The Way of The Great Silver Fleet. Connection at Brownsville is made with Pan American Airways for Mexico City, Central America and the West Coast of South America. The Caribbean countries, the West Indies and the East Coast of South America are served via Pan American Airways from Eastern Air Lines' connection at Miami.

All yours and as near to you as your telephone.

IT PAYS TO FLY

● For reservations call your travel agent, Postal Telegraph or Western Union offices or Eastern Air Lines' office in your city.

EASTERN



Air Lines

MEMBER OF THE NATIONAL SAFETY COUNCIL

Braniff Conducts KC Terminal Preview



A preview of the \$1,000,000 Kansas City Municipal Air Terminal was conducted by T. E. Braniff, president of Braniff Airways, who took a group of southwestern air enthusiasts on a flight in a Braniff DC-2 from Dallas to Minneapolis and Sioux Falls, S. D., recently.

In the picture from left to right are: Kansas City's city manager, E. C. Zachman; L. B. Houston, asst. city manager, Dallas; C. J. Crampton, acting postmaster, Dallas; Mr. Braniff, Lewis Bailey, managing editor, "Dispatch Journal," Dallas; C. O. Scott, Kansas City; Charles Howell, Braniff counsel, Kansas City; Cliff Jones, Kansas City; B. E. Owens, aviation committee chairman, Dallas; Douglas Wood, Braniff district traffic manager, Dallas; Stanley Draper, manager Oklahoma City chamber of commerce; Bruce Forrester, Kansas City, and Harry McCormick, of the "Dallas News."

War Will Not Take Airline Pilots, Col. Olds Says at K.C. Dedication

Kansas City's \$250,000 air terminal building was dedicated Sept. 30 before a crowd estimated at 50,000 persons. Military, aviation, government and civic officials were present in large numbers.

Col. Robert Olds, the GHQ pilot who commanded the good will flight of Flying Fortresses to Buenos Aires last year, stated that during a war there will be a tremendous demand for air transportation in the United States and that airline pilots will be needed for the job they know how to do best.

Maj. Gen. Delos C. Emmons, commander of the General Headquarters Air Force, told a gathering of 500 at a banquet which followed the airport ceremonies, that adequate air power is an absolute necessity if the United States is to engage in the defense of the western hemisphere.

Col. Olds piloted a Boeing Flying Fortress to Kansas City for the occasion.

Speakers at the dedicatory exercises included Mayor Smith, J. M. Donaldson, of the Post Office Dept.; Thomas

H. Beck, president of Crowell Publishing Co., and WPA officials. Scores of private flyers from neighboring communities flew to the city, and a program of acrobatics entertained the large crowd during the afternoon. TWA, Braniff and Mid-Continent had transport planes open for inspection. Extensive improvements to the airport, including paving of the runways, recently were completed. The terminal is one of the most elaborate in the nation.

Grand Rapids Opens Port

Dedication of the Grand Rapids, Mich., new \$92,000 airport administration building Sept. 25 climaxed and ended that city's three-day participation in National Air Progress observance. An exhibition of precision and acrobatic flying by Maj. Al Williams featured the celebration which was attended by PCA officials including C. Bedell Monro, president, and F. R. Crawford and Leslie Arnold, vice presidents.

North Beach Dedication October 15



With the official dedication date of New York's new municipal airport (North Beach) set for Oct. 15, airlines intending to operate from the location have begun plans to move various offices and departments to the field.

American Airlines' treasury department will be moved to North Beach from Chicago Municipal Airport on Oct. 15, and its sales department will be moved from downtown Chicago to the NY terminal on Nov. 1. TWA expects to have established a station at the field by Nov. 1. Weather Bureau officials at Floyd Bennett Field, Brooklyn, recently were notified to prepare records and instruments for shipment to North Beach. United Air Lines' operations at the field are expected to begin after Nov. 1. Pan American Airways announced it would await permission from the CAA before moving.

Work on the terminal began two years ago, and construction costs are estimated at \$40,000,000. Above, one of America's transports is seen in front of the administration building (American Airlines Photo.)

Late News

TWA Buys Marquette

Transcontinental and Western Air Inc., announced Oct. 10 the purchase of Marquette Airlines, subject to approval by the CAA. The line will add 564 miles of route to the TWA system. Marquette operates from St. Louis to Cincinnati and from Cincinnati to Detroit.

TWA long has been desirous of serving Cincinnati.

No financial details were announced, but TWA originally offered \$300,000 for the line and it is understood the final price agreed upon is above that figure. The Marquette owners are understood to have taken a loss of \$250,000 on the line to date. Although a certificate was granted by the CAA, the line has never carried mail. The company began operating in the spring of 1938 during the so-called "grandfather" period.

About a month ago Delta Air Lines almost became owner of Marquette but the deal, which called for \$500,000 of which half was in stock, fell through the last minute. The Delta deal was dependent upon the success of the southern line's application for a route from Atlanta to Cincinnati.

Port Takes Turners Name

The municipal airport at Sheldon, Ia., has been named "Roscoe Turner Airport" after Col. Roscoe Turner, who recently won for the third time the Thompson Trophy at the National Air Races.



MORE GOOD NEWS!

CHICAGO &
SOUTHERN'S

PASSENGER
REVENUE

UP

30.5%

FIRST NINE MONTHS
1939

AS COMPARED WITH SAME
PERIOD OF 1938

We are proud to play our part in serving a wide national network of airways and we appreciate the cooperation of our connecting carriers.

CHICAGO & SOUTHERN
Air Lines



NEW YORK-CHICAGO'S FIRST AIRLINE

● Twenty years ago the Government selected and developed the route which is now United's Main Line Airway.

● More than 55,000 New York-Chicago flights have been made by United over this famous airway. They have added years of useful time to men's endeavors . . . changed travel days into restful, enjoyable hours.

UNITED IS PROUD OF ITS OUTSTANDING RECORD OF FIRSTS

FIRST to fly passengers New York-Chicago to provide stewardess service

FIRST to operate multi-motored passenger planes FIRST to employ radio and other technical services

FIRST three-mile-a-minute schedules And first to offer many other features which have attracted tens of thousands of air travelers.

UNITED AIR LINES

Year 'round the Main Line Airway

ENGINEERS VIEW MANY PROBLEMS

Submerged Engines, Interchangeability,
Design Get Attention at
SAE Gathering

Ten papers covering various phases of aircraft engineering were presented by authorities in their respective fields at the National Aircraft Production Meeting of the Society of Automotive Engineers held at the Biltmore Hotel, Los Angeles, Oct. 5-7.

In a paper on "Problems of Submerged Engine Installations," presented by Wellwood E. Beall, chief engineer, and E. G. Emery Jr., chief of the preliminary design unit, both of Boeing Aircraft Co., results of performance calculations on two practically identical planes, one with submerged engines and the other with conventional nacelle aircooled engines, were announced to the meeting.

"The difference in speed for the same power was found to be in favor of the submerged engine installation by approximately seven to eight per cent," it was said.

Summarizing main problems which confront aircraft designers interested in submerged installations, the authors listed the following:

1. The design of a satisfactory propeller shaft.
2. The satisfactory and safe disposal of the exhaust gases.
3. The overall cooling of the engine compartment, cylinder cooling, supercharged air cooling, lubricating oil cooling, accessory cooling and exhaust disposal system cooling.
4. The mounting of the engine.

Summarizing on the subject of Interchangeability in Modern Aircraft Production, Courtney J. Hertel, assistant chief designer of Douglas Aircraft Co. Inc., said, "... difficulties caused by the large size of parts, the prevalence of double curvature surfaces and of the deflections of the structure are overcome by the application of analytical geometry, the use of lofting, and the construction of a number of sub-assembly jigs of a type peculiar to airplane production."

Illustrating his paper with slides, Henry C. Hill, project engineer for Wright Aeronautical Corp., discussed "Design Problems in the Quantity Production of Aircraft Engines."

Representing an aircraft plant which produced 103 planes in 23 working days during August, with an average for the last six months of approximately 74 planes per month, H. F. Schwedes, assistant factory superintendent of North American Aviation Inc., spoke on "The Final Assembly of Aircraft." His summary of necessary conditions for the rapid production of airplanes follows:

1. A well engineered airplane, not only for performance but for manufacturing as well.
2. Careful planning.
3. A good schedule.
4. Production control, in order to hold various departments in line with schedule.
5. Proper distribution of labor through the sub-assembly of component parts.
6. Issuing of these sub-assemblies as complete as possible to final assembly.
7. An assembly line set up by position through which ships move in an orderly manner on a prearranged schedule.

"Accelerated Aircraft Production for National Defense and some of its Effects on Organization and Personnel," was the subject of the paper given by P. N. Jansen, factory manager, Curtiss Aeroplane Div., Curtiss-Wright Corp.

Methods used today to produce quick-feathering hydromatic propellers were shown through the use of slides, illustrating Arvid Nelson's discussion of "Propeller Production Methods Past and Present as Practiced by Hamilton

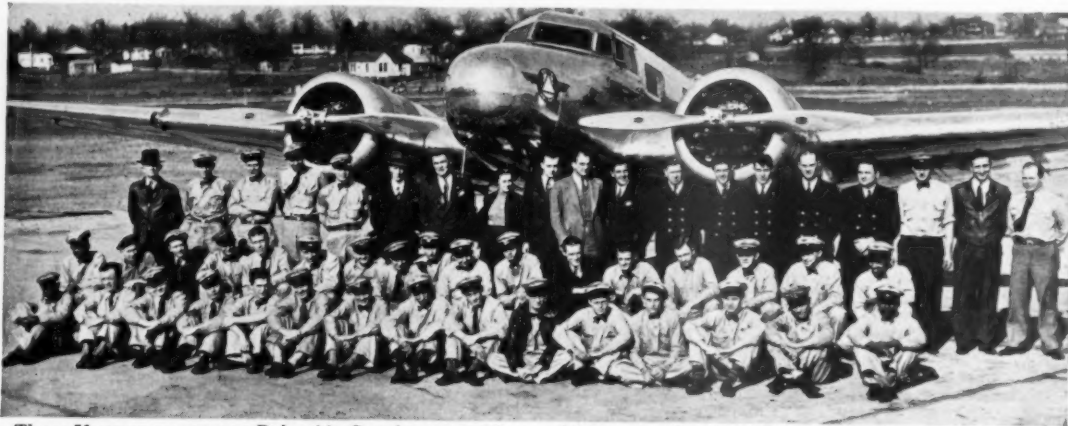
First Photo of the Nearly Secret Lodestar



This is the first picture of Lockheed Aircraft Corp.'s newest commercial transport, the Lodestar, described in detail in AMERICAN AVIATION, Oct. 1. The Lodestar is a 17-place, twin-engine mid-wing transport "designed

to meet the requirements of the airlines of the western hemisphere." Test hops began late in September. The company is ready for immediate quantity production on the new ship.

Delta's Atlanta Personnel



These 51 persons compose Delta Air Corp.'s personnel at Atlanta, Ga. They posed recently in front of this

10-passenger Lockheed Electra. Standing seventh from the left is Pat Higgins, operations manager.

Standard Propellers." Nelson is factory manager for Hamilton Standard Propellers Div., United Aircraft Corp.

A report on the "Progress in the Development of In-Line, Air-Cooled Engines" was given by A. T. Gregory, chief engineer of Ranger Engineering Corp.

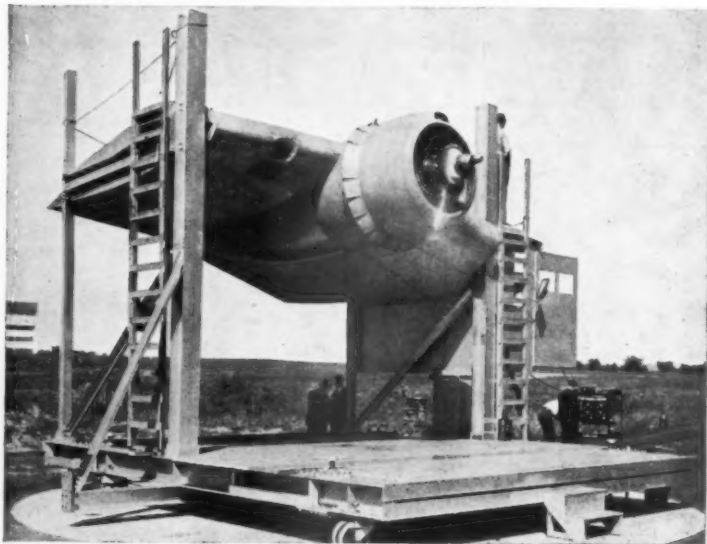
Speaking of the Consolidated 31, B. W. Sheahan, engineer in charge of drafting and personnel of Consolidated Aircraft Corp., said:

"Never before, to our knowledge, has an experimental airplane of this size been produced in such a short space of time, just under 10 months being required from the time it was started until it was test flown. This accomplishment speaks well for the methods used and for the cooperative spirit between the administrative, engineering and manufacturing divisions. Since the development of this model has been productive of considerable business, its development has been amply justified."

Additional papers presented and their authors follow:

"Airplane Brake Installation and Control Consideration," by Henry H. Kerr and F. C. Frank, Bendix Products Div., Bendix Aviation Corp.; "Production of Magnesium Alloy Aircraft Parts," by L. B. Grant, Dow Chemical Co.; "Design and Shop Problems in High Pressure Hydraulic Systems," by Harold W. Adams, hydraulics engineer, Douglas Aircraft Co. Inc., and "Oil Filters and their Effect on the Lubrication and Wear of Engines," by James E. Hurn, DeLuxe Products Corp.

Martin Engine Test Rig



Engineers of the Glenn L. Martin Co., Baltimore, use the engine test rig shown above to determine months in advance of a trial flight the operating characteristics of a future airplane's power plant. The rig consists of a turntable, a mock-up of a portion of an airplane and requisite instruments. Located in the observers' station level with the engine but shielded from it by a wall are the instruments for analyzing and recording temperature and pressure conditions throughout the fuel, oil and cooling systems. The Martin test rig is now in its second year of operation and has demonstrated its usefulness by reducing the hours needed for test flying from one-third to one-half. In addition, insurance premiums on experimental models have been reduced because of the elimination of uncertainty and danger in connection with the performance of a new power plant on its test flights.



The Birdmen's Perch

The other day we were asked a question by a friend of ours who flies all over creation. "Why," he wanted to know, "doesn't Gulf get up a list of airports selling Gulf Aviation Gas so a fella can know where to get it—say, in Arkansas?" We said, "Why not?" and got one up before he could say "contact!" We'd like for you to have a copy, if you want one. Just send a card to

MAJOR AL WILLIAMS, alias "Tattered Wing-Tips,"
Mgr. Gulf Aviation Products, Gulf Bldg., Pittsburgh, Pa.

CAT-SKINNING DEPT.



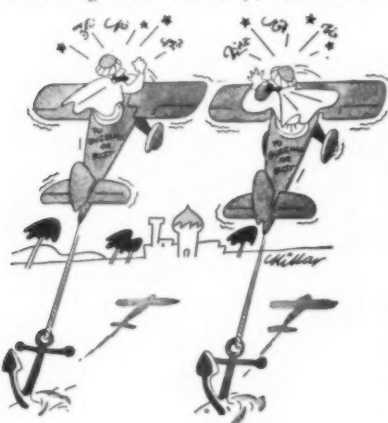
Remember your daddy telling you "There's more'n one way to skin a cat!"?

Well, there's more than one way to refine oil, too. First, there are ordinary methods, used by everybody. But, in addition, there's Gulf's exclusive Alchlor process used only on Gulfpride. This extra, almost-magic refining process digs down far deeper into the 100% Pure Pennsylvania...removes still more sludge, carbon-formers, and dirt.

BRAIN-TWISTER À LA BEDOUIN

The problem this month is not new...far from it. But it still manages to trap about 4 out of every 6 people we try it on.

An old and wealthy Arab had two sons. This being the 20th Century, instead of a



camel each of the boys had a racing plane and they argued continually about whose plane was the swifter, much to the disgust of the old man.

When the father died, as sort of a post-mortem protest, he left his entire estate to the son whose ship would prove slower in a race from el Giaghhub to Buseima. The ensuing race, of course, was a fiasco. What with climbing, gliding, and circling, it took the boys several weeks to cover the first few miles to the Sima oasis where lived a celebrated wise man.

But when they told their problem to the wise man, he in turn told them something that caused them both to leap into the planes and race furiously for Buseima.

What did he tell them?

(The answer's no secret. All you have to do to get it is to mail your solution to T.W.T. Be sure to do so, if you want a surprise!)

THIS MONTH'S WHOPPER

Down in the hinterlands of Venezuela with the Gulf geologists, we were sitting out under the almost neon-like stars. The air, while filled with stinging repartee, was incredibly free from the dread Venezuelan mosquitoes whose blood-thirsty ferocity is a byword from Panama to Cape Horn.

A stranger, cautiously removing the fourth of his over-lapping mosquito head-nets, asked for particulars about the famed "flying stingarees" and inquired into our seeming freedom from them. Almost to a man, the group turned to me, begged that I tell of the far-famed Williams vs *Culicidae* campaign.

I told of great, high-powered mosquitoes which worked up altitude then dived headlong on a victim. They gave no warning of approach, having found means of silencing their propellers.

Then when white men began hanging netting over their hammocks, the mosquitoes changed tactics, and operated in 3-plane formation. Diving together, numbers one and two would arrive slightly ahead of number three. The first two would fly directly against the threads forming the sides of an opening in the netting. And the third would dive on through with his wings folded. They kept this up until all but two of a whole pursuit squadron had passed the outer defenses. They they would form again inside and attack the human target in a huge "V" formation.

This went all right until the victims sprayed the netting with varnish. When the fighting mosquitoes collided with the stiffened netting, the casualty list was so high that they held a conference.

It seemed like a stalemate till a long-billed visiting fireman from Jersey suggested the possibilities in my supply of G.A.G. This they raided a million strong. Fortified by this petroleum vitamin extract, they went through the varnished nettings like rifle bullets.

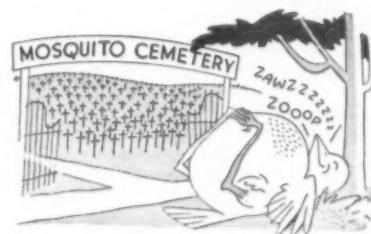
That looked like the end. Our men were compelled to wear so much protective clothing that



they could hardly walk. But, as a desperate measure, we fed the few remaining drops of Gulf Aviation Gas saved from the raiders to the camp mascot, a small yellow canary.

And in sober truth, within 24 hours Old Cheep-Cheep had not only cleaned out every last mosquito in Venezuela but he was flying in regularly from the Andes with a dead condor!

Al Williams



(P. S. In case any of you guys think it's unsporting of an editor to print his own stuff... how would you feel about handing out one of those nifty Whopper Diplomas every month and not having one of your own?)

Gulf Oil Corporation and Gulf Refining Company... makers of



GULF AVIATION PRODUCTS

Stout Plans 2-Place \$3,000 Lightplane

William B. Stout of Stout Engineering Laboratories, Dearborn, Mich., has mocked-up a two-place lightplane which he expects to produce on a mass scale for about \$3,000, according to *Time*.

The plane will be powered by a four cylinder 75-hp. engine and will have a 450-mi. cruising range. Other features include a tricycle landing gear and limited controls which prevent the pilot from pulling the ship high enough to put it into a spin.

Stout expects to be producing one of the ships daily by next spring.

Colleton Assn. Adopts Laws

A constitution and by-laws were adopted at the second meeting of the newly formed Colleton Aviation Association in Walterboro, S. C., Oct. 1. With H. A. Moorer, Jr., president, L. N. Glover, Jr., vice-president, and Frispp Fishburne, secretary & treasurer. The association is organized to promote state aviation and membership and is open to any one interested in the furtherance of aviation. Among those attending the business session were Dexter C. Martin, director of South Carolina Aeronautical Commission, E. F. Markwood, assistant director, and W. W. Watson, president of the State Aeronautical Club.

Cub Damaged by Fire

A new Cub training plane was damaged by fire after landing at Felts Field, Spokane, Wash., on Sept. 19, the day following delivery to Maj. H. R. Wallace who planned to use the ship in the training of college students. Its pilot, Lt. Homer C. Burns, had alighted and cut-off after giving the Cub a trial flight. The cut-off was followed by a backfiring explosion which, it is believed, caused the flames that destroyed the fabric on the \$1,500 plane before the fire was extinguished. The plane was insured.

15,000 See Toledo Show

First air show of Toledo's Civilian Air Reserve attracted some 15,000 persons to Toledo (O.) Municipal Airport, Oct. 1, to witness exhibitions of bomb dropping, spot landing, stunt flying, and Earl Stein's spectacular batwing parachute jump. Purpose of the show, highlighted by three closed-course races, was to raise funds to provide texts and equipment for the CAR's work in training local flight enthusiasts, according to Orin Redhead, chairman.

Jamestown Opens Port

New \$300,000 municipal airport of Jamestown, N. Y., was formally opened Oct. 1 with a dedication program and air show that included acrobatic flying, parachute jumps, races and formation flying. Ceremonies were sponsored by the Airport Committee of the city council, of which Robert A. Hanson is chairman; Ira Lou Spring Post, American Legion, and Frederick Larson, manager of the port.

2 Win Trophies

Trophy for best all around flying at the annual air meet sponsored by the Wilkes-Barre Wyoming Valley Flying Club, Wilkes-Barre, Pa. airport, Oct. 1, was awarded to William James, of Wildwood, N. J. Herbert Hardy of Kingston won the flying club's trophy.

Fairbury Port Approved

Fairbury, Neb.—The city council has leased 160 acres which have been approved as an airport site by the state aeronautics commission. R. A. Davis is chairman of the Fairbury airport committee.

More Schools May be Added to CAA Program; 8,480 Trainees Allotted

Revealing that as many as 25 more schools may be added to the list, CAA Chairman Robert Hinckley on Oct. 6 stated that 8,480 trainees have been allotted to 355 institutions participating in the pilot training program.

Actual flight instruction will not begin until about Oct. 15, and most of it will not be underway until Nov. 15, Hinckley said. He also stated that the 1941 pilot training program already has been worked out with the cooperation of the War Dept. and has been "agreed to and signed" by the responsible persons.

Discussing the \$100,000 research program (AMERICAN AVIATION, Oct. 1), Hinckley said its purpose will be to develop aptitudes and improve types of instruction. "Out of the research may come by-products that will save many times the cost of the program," he stated.

The latest list of schools released by the Authority include the following:

California

Mills College, Oakland, Visalia
Visalia Junior College, Visalia
Stockton Junior College, Stockton
Chaffey Junior College, Ontario
Compton Junior College, Compton
Modesto Junior College, Modesto
Salinas Junior College, Salinas
Santa Ana Junior College, Santa Ana
University of California, Los Angeles
University of Santa Clara, Santa Clara
Long Beach Junior College, Long Beach
San Diego Junior College, San Diego

Colorado

Mesa County Junior College, Grand Junction
Trinidad State Junior College, Trinidad
Western State College of Colorado, Gunnison

Connecticut

Junior College of Connecticut, Bridgeport
Teachers College of Connecticut, New Britain
Millyer Junior College, Hartford

Georgia

Armstrong Junior College, Savannah
Gordon Military College, Barnesville
Middle Georgia College, Cochran

Idaho

Lewiston State Normal School, Lewiston

Illinois

Northwestern University, Evanston

Indiana

Tri-State College, Angola

Iowa

Iowa Wesleyan College, Mt. Pleasant

Kansas

Dodge City Junior College, Dodge City
Garden City Junior College, Garden City

Louisiana

Loyola University, New Orleans

Maine

Bates College, Lewiston

Michigan

Wayne University, Detroit
Flint Junior College, Flint

Grand Rapids Junior College, Grand Rapids
Jackson Junior College, Jackson
Muskegon Junior College, Muskegon
Ferris Institute, Big Rapids
Gogebic Junior College, Ironwood
Port Huron Junior College, Port Huron
Grand Rapids College of Science, Grand Rapids
Lawrence Institute of Technology, Highland Park
Northern State Teachers College, Marquette
Michigan College of Mining & Technology, Houghton
Highland Park Junior College, Highland Park
Cleary College, Ypsilanti

Minnesota

Virginia Junior College, Virginia
State Teachers College, St. Cloud

Mississippi

State Teachers College, Hattiesburg
Sunflower Junior College, Moorhead

Missouri

Washington University, St. Louis

Montana

Montana State University, Missoula

Nebraska

Chadron State Normal School, Chadron

New Jersey

Princeton University, Princeton
Newark College of Engineering, Newark
University of Newark, Newark

New Mexico

New Mexico College, State College

New York

Cornell University, Ithaca
Siena College, Loudonville
College of the City of New York, New York
Niagara University, Niagara University
St. Johns University, Brooklyn
 Hofstra College, Hempstead

North Carolina

Presbyterian Junior College, Maxton

North Dakota

North Dakota State School of Science, Wahpeton

Ohio

Lake Erie College, Painesville
Capital University, Columbus
Wittenberg College, Springfield
Bowling Green State University, Bowling Green

Oklahoma

University Preparatory School & Jr. College, Tonkawa
Northwestern State College, Alva
East Central State Teachers College, Ada
S. W. State College of Diversified Occupation, Weatherford

Pennsylvania

Lebanon Valley College, Annville
Williamsport-Dickinson Seminary, Williamsport
University of Pennsylvania, Philadelphia
Grave City College, Grave City
Pennsylvania Military College, Chester
Franklin & Marshall College, Lancaster
St. Joseph's College, Philadelphia
Albright College, Reading

South Dakota

Augustana College, Sioux Falls
Dakota Wesleyan University, Mitchell
University of South Dakota, Vermillion

Tennessee

Austin Peay Normal School, Clarksville
Union University, Jackson
Vanderbilt University, Nashville

Texas

The College of Marshall, Marshall
Tyler Junior College, Tyler
University of San Antonio, San Antonio
John Tarleton Agriculture College, Stephenville
S. W. Texas State Teachers College, San Marcos

Virginia

Hampton Institute, Hampton

West Virginia

Shepherd State Teachers College, Shepherdstown
Beckley College, Beckley

Wisconsin

Beloit College, Beloit
University of Wisconsin, Madison

Altitude Antics

Capt. Budd J. Peaslee of the 30th bombardment squadron, 19th bombardment group, GHQ Air Force, while flying a Douglas B-18A on a recent formation high altitude bombing mission, made a valuable discovery, according to the March Field correspondent of the "Air Corps News Letter."

Flying at 18,000 ft., Capt. Peaslee suddenly found he was falling behind in the formation. Engines were throttled to the maximum, and everything possible was done to regain the position. In desperation, Capt. Peaslee let down the flaps, and to his surprise the altimeter began to move up and he found himself overtaking the rest of the formation.

Making the most of his discovery, the News Letter explains, he continued on the bombing run to establish the best high altitude bombing score on record.

Newark Base Leased

The city commission of Newark, N. J., recently approved lease of the city's seaplane base at the Port of Newark to Jersey Marine Airways Inc., of which William Hughes is president. It was said the company would conduct a charter seaplane business and service seaplanes at the base. A school also is contemplated.

Alaska Port Work Ahead

Palmer Airport at Anchorage, Alaska, now being constructed by CCC labor, will have a landing field of 500 x 3,000 ft. when completed. CCC officials report. The work, begun in Sept., is expected to require 2,000 man-days, since the ground first must be cleared of tree stumps.

A Few Copies Remaining

GILL ROBB WILSON'S

Poems of Aviation

"Leaves From an Old Log"

* Forward by Jimmie Doolittle
Introduction by Casey Jones

* Limited, de luxe edition—each copy autographed by the author, and numbered

* Limp black leather or grey suede binding

* Printed on high quality deckle edge paper—a real collector's item

\$5.00 per volume
(Boxed and Postpaid)

AMERICAN AVIATION
ASSOCIATES

Earle Building Washington, D. C.



Students of the Autogiro School, located at Wright Field, Dayton, O., are flying six of the eight autogiros recently delivered to the Air Corps by Kellett Autogiro Corp. Military formations of the windmill type planes are a new sight in this country. (Air Corps Photo.)

Aeronautical Charts

The U. S. Coast and Geodetic Survey, Dept. of Commerce, Washington, D. C., announced the following new editions of charts.

New Aeronautical Radio Direction Finding Charts

(A series of six charts, numbered 21-DF to 26-DF, and now completed with the issuance of the two announced below. These charts are scaled 1:2,000,000 and lithographed in colors showing aeronautical features in black, names of topographic features in dark gray, contours in brown, drainage in blue, flight lines in purple, cities in yellow and elevation in gradient tints. They sell for 75c.)

23-DF, Aug. 1939. Size, 24x40". Located in latitude 37°-47" north and longitude 67°-92° west, covering an area of about 343,000 sq. mi.

This chart covers Illinois, Kentucky, Wisconsin, Michigan, Ohio, West Virginia, Virginia, Maryland, Delaware, Massachusetts, Pennsylvania, New Jersey, New York, Rhode Island, Connecticut, Vermont, New Hampshire, Maine and the Province of Ontario.

26-DF, June 1939. Size, 29x32". Located in latitude 25°-39° north and longitude 75°-91° west, an area of some 950,000 sq. mi.

The area covered by this chart includes Florida, Georgia, Alabama, Mississippi, Louisiana, Tennessee, Kentucky, West Virginia, Maryland, Delaware, North Carolina and South Carolina.

New Regional Aeronautical Chart

(Regional charts, embracing the area covered by some half-dozen sectional aeronautical charts, are lithographed in colors, showing airports, names of airports, beacons, compass roses, isogonic lines, weather broadcast, etc., in red; radio ranges in pink; flight lines in purple; railroads and topographic features in black; water in blue; areas of cities in yellow; and elevation in gradient tints. They are scaled 1:1,000,000 and sell for 75c.)

1-M, Aug. 1939. Size, 22x35". Located in latitude 44°-49" north and longitude 114°-125° west, an area of about 197,000 sq. mi.

This is the seventh chart issued of this series of 17 regional aeronautical charts, and is lithographed in 15 colors. It covers the region embraced by the following sectional aeronautical charts: Bellingham, Kootenai, Seattle, Spokane, Portland and LaGrande.

New Edition of Regional Aeronautical Chart

(This cancels previous edition. Pilots are warned against using obsolete charts.)

9-M, July 1939. Size, 26x43". Located in latitude 38°-44° north and longitude 78°-90° west, covering an area of some 250,000 sq. mi.

Includes changes in air navigation facilities since last edition.

New Edition of Sectional Aeronautical Chart

(This cancels previous edition. Pilots are warned against using obsolete charts. All sectional aeronautical charts are scaled at 1:400,000 and priced at 40c each, with a discount of 33 1/3% on orders, including assortments, grossing \$10 or more.)

SAN ANTONIO, Oct. 1939. Size, 20x43". Located in latitude 28°-30° north and longitude 90°-20' 99°-40' west, covering an area of about 52,000 sq. mi.

This edition includes the beacons on the Brownsville-Houston airway and the realignment of the Houston radio range.

Air Marking Assumes Importance for Students, Says Blanche Noyes

Noted Woman Flyer, Pushing Project Alone For Two and One-Half Years, Reports on Her Work in the 48 States; Finds No Politics in Aviation

Having covered each of the 48 states alone in two and one-half years, touching some of them several times in the interests of air marking, Blanche Noyes, noted woman flyer and 1936 co-winner of the Bendix Trophy Race,



Noyes

declared on Oct. 6 that safety devices in the form of markers are more important now than ever before because of the thousands of new student flyers who soon will be making cross-country trips.

"Pilots in Oklahoma, for instance, are likely to say that their home state doesn't need markers," she pointed out. "They tell me they want markers in Texas or some other neighboring state, when the fact is that they know their own state well and are able to orientate themselves there without markers. It's when they're in unfamiliar territory that they want these helpful devices."

Working in the airport section of the CAA, Miss Noyes receives letters from itinerant flyers, sportsman pilots and airline pilots alike, asking her to see what she can do about having some particular area marked.

Flying her own 145-hp. Warner-powered four-place Cessna, she calls upon governors, heads of state aeronautical bodies, WPA officials and others in an attempt to stir up interest in state-wide programs of air marking as an aid to flyers. Mayors of many towns have been helpful, she said, and in a number of instances owners of large buildings have personally financed roof marking for those buildings.

"I find most governors very sympathetic with the program, and it has been quite encouraging to encounter no politics in the states as far as aviation is concerned," she declared.

"My work would be a failure without the cooperation of these state officials and the splendid support of Maj. A. B. McMullen, chief of the CAA's airport section; R. C. Gazley, chief of the technical development division, and Clinton M. Hester, CAA administrator."

State emergency funds often are used for the work, as in New York and North Carolina. The Standard Oil Company of California is air marking California and parts of Nevada, Washington and Iowa. Actual painting of the markers is accomplished in many cases through state highway departments and the WPA.

Minnesota members of the 99's instituted a program in their state in conjunction with private flyers, and work there has been going ahead since Dec. 1938.

Miss Noyes, in her tour of the states, has found good systems of legible markers in North Carolina, where the work will be continued until December; in Florida, one of the best-marked states; in Michigan, where practically every town is marked; in Connecticut, where the project is pushed constantly; in Arizona, where many ground markers are used; in West Virginia, in which the highway department and WPA

marked 177 towns; in Kentucky and Tennessee; in Louisiana, where marking is done through the WPA; in New Jersey, where Gill Robb Wilson, director of aviation, boasts of a marker every four square miles, and in Iowa, where the state's program is handled by the American Legion under the guidance of Col. Charles Graul.

Crome yellow paint should be universal, Miss Noyes said, because it is best seen in bad weather and because pilots have learned to look for that color. Pennsylvania, she said, needs a new program due to the fact that paint used on old markers was not of the proper color. Letters not less than 10 feet in height are suggested for markers, and these, she stated, can be read at 6,000 ft.

Good jobs have been done in Oregon, Wyoming, Delaware, New Jersey and most of the New England states, in her opinion, but remarking will be necessary next year.

Texas, Miss Noyes said, is the first state to appropriate money through the legislature for air marking, \$6,000 having been set aside for paint, and 18 trucks having been recruited from the highway department. The Nebraska legislature has appropriated funds and work there is going ahead.

North Dakota in the last few years has marked every town having a building of adequate size, and South Dakota has a project to fill in what few markers the state now needs. Mississippi is marking now and Georgia expects to re-open its program.

Illinois is working on ground and roof markers. Arkansas has completed a program within the last year. Kansas has marked all but one WPA region, and a drive, supported by Gov. Payne Ratner and the WNAA, is on to complete the task. Missouri has been progressing in its project during the last year.

Good showings have been made in Nevada, Maine, New Hampshire, Vermont and Montana, and the latter state is opening another program, as is Wisconsin, a state that has maintained good markers for a number of years. Washington also is opening a new program, and Massachusetts is progressing in its drive. A truck and crew are working through South Carolina, and the aviation commission of Indiana has been successful in marking every town.

In 1929 Ohio had 1,320 markers, making it one of the best-marked states. A bill passed the year before provided for markings in every city, and an effort is being made now to bring Ohio up to its 1929 standing. New York put up about \$9,000 in conjunction with WPA, and work was started this summer. Approximately \$4,000 has been appropriated in Oklahoma, and a fund has been set aside for marking in Vermont.

Miss Noyes reports that Gov. C. A. Bottolfsen of Idaho has promised everything for aviation because "he feels it is most important." Colorado recently began work, and Alabama has a new project which it hopes to complete this fall.

Maryland is "sadly in need of a new project," she said, and reported that she has had few results from her work in New Mexico. "These markers have

New Orleans Storage Fee Protested by Exec. Counsel

Under compromise agreement Alfred D. Danziger, executive counsel to Mayor Robert S. Maestri of New Orleans, La., must pay \$200 for storage of his private airplane at New Orleans Municipal Airport during the last 22 months instead of the \$542.70 originally asked by the Orleans Airport Commission. Objecting to the first bill, Danziger declared that part of the amount was for repairs on his plane caused by fire in the hangar and another part was for a year's free storage which had been granted by E. E. Elam, former airport manager, as compensation for the fire damage.

Danziger said Elam informed him that the airport, anxious to encourage private aviation, had permitted use of the hangars free for long periods of time by private plane owners. Leon Tujague, president of the commission, suggested that Elam probably had exceeded his authority in the case.

Maine Group to Breakfast

Twenty-seven members of the newly formed Maine Airmen, an association of licensed airplane pilots, mechanics and plane owners, made their first mass goodwill breakfast hop in 11 planes from Portland Municipal Airport to Sanford Airport, Sept. 24. In charge of the flight were Milton B. Smith and Harold F. Troxell, managers of Portland Airport, assisted by Wesley Temple, Sanford Airport manager.

to be kept up, repainted regularly, or they'll begin to look anemic."

Miss Noyes, acting in her capacity as air marking supervisor and pilot for the CAA's airport section, flies about 40 hours each month. Her 1936 Bendix flight with Louise Thaden was made in a Whirlwind-powered Beechcraft from New York to Los Angeles.

★ NEXT STOP ★ LOS ANGELES

And the favorite stopping place of air-minded travelers... The BILTMORE Hotel. The social center of the Southland... Western America's largest, finest hotel.

Here, you are never up in the air for service... but always aware the Biltmore is as modern as aviation.

CENTRALLY LOCATED
IN TRANSPORTATION CIRCLE

RADIO COLLECT
for Reservations



The BILTMORE Hotel
DOWNTOWN LOS ANGELES

WATCH FOR THE NEW
WACO MODEL 'E'
"Pace Setter"

WITH
CUSHIONED
POWER



TSA, BRANIFF ASK AMARILLO-ATLANTA

New Company Denies Connection
With TWA as Hearing Opens;
Eastern Intervenes

Hearing opened Oct. 2, and was still in session at this writing, on the applications of Trans-Southern Airlines and Braniff Airways for a mail-passenger-express route between Amarillo and Atlanta via Oklahoma City, Memphis and other intermediate points.

The hearing, first one in which a new airline is applying for the same route as an established company, is being held before CAA Examiner F. A. Law Jr. Appearing as intervenor is Eastern Air Lines, while Delta Air Corp. is represented as an "interested party." These two companies now offer Memphis-Atlanta service through a connection at Birmingham. Both Trans-Southern and Braniff propose to operate direct service between these points.

At the outset of the proceeding, William C. Lewis, TSA attorney, stated that his company selected its name without knowing that another airline used it in advertising (Delta Air Lines—"the Trans-Southern Route"). Lewis stated that Trans-Southern would present testimony under that name at the hearing, but would change as soon as possible.

Lewis also pointed out that because Leland Hayward, a director of TWA, had a small interest in Trans-Southern, charges had been made that the latter company is a "TWA set-up." Lewis emphatically denied such charges, adding that TSA is an Oklahoma City enterprise and will remain as such. Later in the week, Hayward took the stand and made the same statement. He explained that he was desirous of acquiring more TSA stock, believing the company to be a sound investment, but that the Oklahoma City interests would not permit it.

Exhibits introduced showed that as of Sept. 25, TSA's assets were \$39,091.86 cash on hand and in bank, plus a TWA travel card of \$425.00. Liabilities were listed as \$1,186.34 accounts payable and \$50,000 capital stock. Expenses of \$11,669.48 also were shown. Status of stockholdings is: F. C. Hall, now holds 217½ shares, and has subscribed for 601 additional, as have W. E. Hightower, Leslie Pain and Eugene Jordan; Leland Hayward, holds 84, subscribed for 516 additional; Keith Kahle, 23 and 552; W. C. Lewis, 9 and 216; Kenneth Frank, 10 and 240, and Deane Gull, 3 and 72.

Four TSA officials have testified to date: F. C. Hall, president; Eugene Jordan, secretary-treasurer and general manager; Earl Rockwood, operations manager, and Keith Kahle, vice-president. Kenneth Frank, a stockholder and president of newly-formed Dixie Airlines (story on page 13) also appeared to explain his stock interest and add that there is no connection between Dixie and TSA. Hall, a wealthy Oklahoma oil man, who has backed several aviation enterprises, told Examiner Law that "this (TSA) is the only chance I see to get any money back." Jordan testified that the company does not anticipate any difficulty in securing pilots, dispatchers, etc., adding that TSA has a commitment from Lockheed Aircraft Corp. that it will be able to deliver equipment within 90 days from order.

Stendham Acker, manager of the Birmingham airport, stated that his city favors a route from Amarillo to Memphis, but is apprehensive of Memphis-Atlanta unless Birmingham is included as a stop. In asking that

10 Reach 20,000,000-Mile Mark



Nine of the 10 western division captain-pilots of TWA are shown lined up returning the salute of L. W. Goss, superintendent of operations, with William Hughes, extreme left, maintenance superintendent, acting as drill sergeant. The occasion was presentation of new Benrus instrument watches to the men who in September had flown a total of 20,000,000 miles for the line. In the line left to right are: Waldon Gollen, chief pilot western division, 1,304,000 mi.; L. J. Chiappino, 1,652,000; Jack Walsh, 2,170,000; Silas A. Morehouse, 1,792,000; H. H. Holloway, 2,240,000; Milo Campbell, 1,932,000; Franklyn Young, 1,892,000; Felix Preeg, 1,412,000, and Eddie Bellande, 2,352,000. Only one absent was George Rice, who was enroute to Albuquerque on a TWA schedule. The captain-pilots of the western division have been with TWA 10 years or more. They are senior pilots of the line, ranking in seniority all of the other 200 pilots in the system. Their record was made without injury to a passenger in the western region.

United Places Order For Five New DC-3's And Two Sleepers

With \$870,000 budgeted for new planes next year, United Air Lines has placed an order for seven Douglas planes, five DC-3's and two sleeper transports, increasing the company's fleet to 60 twin-engined transports, W. A. Patterson announced Oct. 6. Delivery date is set for Apr. 8. (AMERICAN AVIATION, Oct. 1, reported UAL's intent to order new DC-3's).

The new aircraft will be equipped with 1,200-hp. Pratt & Whitney engines. Top speed is 220 mph., with cruising rate 190 mph. using 60% power. Feathering propellers and the newly developed injection carburetor comprise other equipment.

"With the additional sleeper planes United will next spring operate five sleepers nightly between the east and the Pacific coast. The additional 21-passenger planes will provide greater frequency of intercity flights, United's traffic this year having shown a 35% gain over 1938. With the additional equipment, coupled with the expected traffic increase next year, it is expected the 60 airplanes will be operated nearly 20,000,000 miles in 1940," United said. The company has made an average expenditure of \$2,000,000 a year for the last five years for new equipment and engines.

Birmingham be so included. Acker pointed out that his city is only 50 miles off the straight-line between Memphis and Atlanta.

Testifying in favor of the route were the two Democratic Senators from Oklahoma, Josh Lee and Elmer Thomas, and the following Oklahoma Congressmen: Lyle Boren, Mike Monroney, Jack Nichols and Sam Massingale. Congressmen Ben Cravens and David Terry of Arkansas, Walter Chandler of Tennessee, and Robert Ramspeck of Georgia, also appeared. Chamber of Commerce witnesses included Carl Hinton, Amarillo; Frank Shaw, Atlanta; O. F. Soderstrom and Wm. R. Kent, Memphis; Marvin Kreiger, Muskogee, and Tom Steed, Shawnee. R. C. Kinsey, special agent in the CAA's economic compliance division, presented exhibits dealing with existing airway aids along the proposed route, necessary additions, etc.

Lewis and John Wynne appeared as counsel for TSA, Roger Whiteford for Braniff, John Wanner for CAA, Smythe Gambrell for EAL and Ernest Moore for Delta.

Chute for Fast Planes



A new Italian parachute, Salvador D.39, shown above, has been designed to resist violent shocks submitted when the jumper leaves a fast military plane. The increase in speed of military planes from about 150-185 mph. to 275-300 mph. motivated revision of the principles for the construction of this chute. In the device, a canopy has been constructed with an elastic hole in its summit which dilates when the canopy opens, so that the shock is reduced. When speed is stabilized the hole closes gradually until normal braking is realized. The auxiliary extracting parachute is of silk and is provided with a spring which causes it to open in any position. Chute's total weight is about 17½ lbs.

Canadian Extension Proposed

A proposed extension of the Aluminum Co. of Canada with a new plant in Kingston is reported in Canadian war office orders. Part of the company's \$13,500,000 program, the Kingston plant will manufacture materials used in aircraft construction formerly obtained from England.

**8
Flights**

**BETWEEN
CHICAGO
and
NEW YORK**

BOTH DIRECTIONS

**Non-
Stops**

**4:00 PM
and
5:30 PM**

TWA

**Phone YOUR TRAVEL
AGENT OR TWA
TRANSCONTINENTAL
& WESTERN AIR, Inc.**

CAA Box Score

Status of CAA proceedings involving "grandfather" certificates, rate cases, and new route hearings is as follows:

Certificates

"Grandfather" certificates yet to be issued include Pan American Airways Inc., Panama Airways (PAA) and Uraba, Medellin & Central Airways (PAA), on which hearing will be held Oct. 23. Pan American-Grace Airways' application will be heard Oct. 26. Decision is pending on Tri-State Aviation, which was heard Sept. 21.

Rate Cases

To date, nine rate decisions have been issued, five are pending and two are yet to be heard. Those pending include United Air Lines, heard Apr. 24-28; Pan American's Bermuda route, Apr. 10-22; Penn-Central, Mar. 9-10; Boston-Maine, May 8, and TWA, Aug. 28-31. To be heard are American Airlines and Pan American's New Zealand application, neither of which have been set. The New Zealand route case started Oct. 4, and the rate application will be heard if the Authority decides to establish the line. Decisions issued include Mid-Continent, Apr. 17; Inland, June 9; Continental (Wichita-Pueblo), June 10; Pan American (Atlantic), June 30; National Airlines, July 13; Northwest, July 19; Braniff and Western Air Express, Aug. 15; Pan Am (Pacific), Sept. 14.

New Routes

Outside of the Wichita-Pueblo route, which was provided for in the Civil Aeronautics Act, no new lines have been established by the Authority. Hearings have been held in six cases, as follows: Northwest Airlines, for Milwaukee-Marquette and Milwaukee-Twin Cities, June 5-9; Eastern and National, new routes in Florida, May 31-June 2; Western Air and Inland, Great Falls-Lethbridge, June 19-24; Northwest, Braniff and Mid-Continent, Twin Cities-Kansas City and Des Moines-St. Louis, June 12-23; Braniff, Eastern and Chicago & Southern, Houston-Memphis-Louisville, Sept. 6-30, and Braniff and Trans-Southern Airlines, Amarillo-Okla. City-Memphis-Atlanta, opened Oct. 2 and still was in session at this writing.

Another important matter pending is the decision in the North Beach Airport case. Hearing on the applications of United, American, TWA and Eastern for permission to move there from Newark was held Sept. 11-22.

More PT-13A's for Army Training



A fleet of new Stearman PT-13A's, like the one above, will augment the large number of these planes already in service as standard Air Corps equipment as the result of a recent War Dept. award of a \$2,843,405 contract to Stearman Aircraft Div., Boeing Airplane Co., Wichita, Kan. Fledgling Army pilots receive their primary training in PT-13A's at the Air Corps Training Center, Randolph Field, Tex.

Pigeon Flies AA in Race

Perhaps its gesture of helpfulness would be held unethical in manuals of sportsmanlike pigeon racing, but American Airlines got itself into the news on Oct. 2 when it participated in a carrier pigeon derby which was being run off from Charlottesville, Va., to New York.

Pigeon entry X, unable to orientate itself because of heavy fog and clouds, came down on Washington Airport and made friends with Jack Wheelwright, American ticket agent, who noticed X's number and capsule attached to its leg. Wheelwright, with Herb Ford, AA's district sales manager, then inserted a note in the capsule which read like this:

"Grounded at Washington account weather; continued via American Airlines' flight 26; Oct. 2, 2:50 p.m."

Entry X flew flight 26 in the pilot's compartment with Capt. A. Austen who turned the bird loose upon arrival at Newark.

Newly-Formed Dixie Airlines Asks Pitt., Atlanta, Birmingham

Dixie Airlines, a new company, on Oct. 5 filed application with the CAA for a route between Atlanta and Pittsburgh via Knoxville, Charleston, W. Va., and Wheeling, and between Birmingham and Knoxville via Chattanooga.

The application was signed by Kenneth Frank, as president, treasurer and chief financial officer, and by Vernon Dorrell, sales manager of Vega Airplane Co., as technical advisor of operations. Other officers were not named. Listed as attorneys were W. S. T. Hurlock Jr., Harrisburg, Pa., and Terrell C. Drinkwater, Denver, Colo. Frank's address was given as Bona Allen Bldg., Atlanta, Ga.

Dixie plans day visual contact operations until airway facilities are provided, and will use four new Lockheed 10-A's. "Commitments for the purchase and delivery of these aircraft have been agreed upon by the applicant and Lockheed Aircraft Corp., Burbank, Cal.," the application stated. Price of each plane, fully equipped, will be \$57,000. The company also has agreed upon commitments for purchase and delivery of spare engines, propellers and other equipment.

Not including mail revenue, Dixie expects the following losses during the first five years of operations: \$270,914.79, \$234,689.05, \$198,463.31, \$162,237.57 and \$126,011.83, respectively. Assets of the company are listed as \$5,400 cash, and deferred debits (expense in organization and in preparing application) of \$14,600.00. Liabilities are \$20,000 (authorized capital stock of \$1,000,000 minus \$980,000 unissued.)

The company stated that it believes \$600,000 will be ample to buy all flight and ground equipment and provide adequate working capital at the beginning of operations. "In order to provide such amount, 12,000 shares of the capital stock of the applicant have been conditionally subscribed by financially responsible individuals at a price net to applicant of \$50 per share, the par value of the stock," the application stated. "Such stock subscriptions are conditioned upon the award to applicant of the certificate applied for. Each of the subscribers has agreed to pay his subscription within 60 days upon such award by the CAA. No brokerage, commissions or other charge is being or has been paid by applicant in connection with the sale of this stock."

Survey flights are being made over the proposed route, and familiarization flights will be conducted to qualify pilots, if Dixie is awarded the route, the application stated.

CERTIFICATES SUSPENDED

Four Inland Air Lines' Employees Temporarily Lose Dispatcher Permits After CAA Test

The CAA recently issued orders temporarily suspending for 30 days the air carrier dispatcher certificates of Glenn L. Scott, P. J. Andersen, Gail G. Davison and Richard Leferink, all employed by Inland Air Lines Inc.

The orders said it appears "there is probable cause to believe" that each is not qualified to hold such certificates or to perform the duties of an air carrier dispatcher in that each failed to "accomplish satisfactorily" written examinations given about Aug. 3 covering parts of the Civil Air Regulations, characteristics of aircraft operated, system of collecting and disseminating weather information, elementary principles of radio communications and radio range operation, and influence of terrain on meteorological conditions.

DELTA AIR LINES
THE TRANS-SOUTHERN ROUTE



THE FASTEST TRANSPORTATION ACROSS THE SOUTH

The shortest route between California and Florida . . . Lockheed Electras on all flights . . . Deluxe equipment manned by courteous and efficient personnel provide a service par excellence in an atmosphere of traditional southern hospitality.



Pro, Con and Otherwise

To the Editor:

Oct. 6, 1939.

I read your article on the "sit-down strike" on airport plans in the Sept. 15 issue and as no one beside yourself has declared himself in the Oct. 1st issue, I will take it upon myself to fire a broadside at Mr. Betters and those he represents. The sit-down strike on landing fields and airport development sponsored by him and the municipalities he represents will have no effect on municipalities that want to get on the airway map.

Every hamlet, town or village should have a landing field. Airplane service is now available to any part of the country, and in many instances airplanes have played an important part in cases of emergency and disaster when all other means of transportation were cut off.

Mr. Betters must not think that the Post Office Dept., the Army, Marine Corps, Coast Guard and especially the commercial airlines are going to wait until his sit-down strikers win their strike. No indeed. Airplanes will continue to land and take off where there are landing fields. Mr. Betters and his organization will probably sit down and watch them fly over their heads, and some day will say, "We could have had air mail and an airline through here, but Mayorsville beat us to it by putting in a landing field."

One of the most "unusual" things that ever happened to Los Angeles, Cal., along those lines happened when the first transcontinental air mail route was established. Those who were at the helm of the Los Angeles chamber of commerce and the city fathers of the Angel City at that time had the same idea in their heads as Mr. Betters and the municipalities he represents. "Why should we, the city of Los Angeles, spend the tax payers money to build an airport for the Post Office Dept.?" they said. "They 'have to land here' as we have the climate and the western terminal of the air mail belongs to Los Angeles."

All the little towns west of Omaha and between Salt Lake City and San Francisco got busy; they cleared off landing fields, and on Sept. 8, 1920, the first west-bound trip was made, and San Francisco, NOT Los Angeles, got the western terminal of the first transcontinental air mail route. Los Angeles sat down and waited an "unusual" unnecessary five years and seven months before they got air mail from New York and the east. They received air mail, but it had to come from San Francisco by train.

Western Air Express received its contract from the Post Office to fly air mail from Salt Lake City to Los Angeles by way of Las Vegas, Nev., Apr. 17, 1926, connecting with the transcontinental route at Salt Lake City. Las Vegas paved the way for the first air mail to Los Angeles by establishing their landing field in 1921, and Las Vegas, small as it was then, did not ask for government funds for their field. They wanted to get on the airway map, and today two major airlines operate in and out of Las Vegas.

Next came the air mail route over northern New Mexico and Arizona via the Grand Canyon and Boulder Dam. The little towns of Kingman, Williams, Prescott, Winslow and Holbrook, Ariz., answered the call for landing fields. None of them asked for government funds. They cleared their fields in 1923, the route was

Folks Worth Meeting--

ARTHUR NUTT, vice-president in charge of engineering for Wright Aeronautical Corp., Paterson, N. J., and an internationally noted engineering authority on aircraft powerplants, has been linked closely with his company's development of some of the most famous engines.

These include the new 18-cylinder Wright Duplex-Cyclone, rated at 2,000 hp., revealed May 19 as the world's largest and most powerful aircooled aircraft engine; Wright Cyclones for the Air Corps' armada of Boeing Flying Fortresses; Wright double-row Cyclone 14's for Pan American Airways' Clippers, and powerplants for airlines and military services throughout the world.

Nutt joined Curtiss Aeroplane & Motor Co.—now the Curtiss Aeroplane division of Curtiss-Wright Corp.—immediately upon being graduated from Worcester Polytechnic Institute in 1916, subsequently became a test engineer and was closely connected with the development of the Curtiss OX-5. In 1920, he was appointed chief engineer.

In this post, he supervised the design and development of the renowned series of Curtiss liquid-cooled engines which powered many leading military and racing planes of the U. S. during that period. These included the chemically cooled, 12-cylinder Conqueror, the first engine with this type of cooling ever designed and produced in quantity.

Nutt was made vice-president in charge of engineering for the Wright

corporation in 1930 after that organization absorbed the engine division of the Curtiss Aeroplane & Motor Co., and both the Curtiss' and Wrights' interests were merged to form the present Curtiss-Wright Corp. In this position,



he directs the designing, developing and production of aircraft engines for the Navy, Army, Coast Guard, airlines, as well as military and commercial air services abroad.

A pilot, Nutt holds U. S. government license No. 7378.

Talman and Franklin Elected to TWA Posts

Election of E. Lee Talman as vice-president and treasurer of TWA and also as a member of the board of directors was announced Oct. 2 by Jack Frye, president. The board also elected J. C. Franklin as secretary. Election of Franklin and Talman fills two posts which had been vacant for several months. Talman in July was appointed to succeed Frank G. Wilson who resigned as treasurer.

Members of the board who attended the meeting included Frye, T. B. Wilson, chairman; N. S. Talbott, Dayton, O.; Leland Hayward, Beverly Hills, Cal.; Sydney Maestre, St. Louis, Mo., and Paul E. Richter, executive vice-president. The meeting was held in Kansas City in connection with the dedication of the new Kansas City Municipal Air Terminal.

flown over by Army planes to feel it out, and now the fastest route from coast-to-coast serves them with air mail and passenger service.

Why, then, should we listen to these sit-down moss backs who are trying to hold up the establishment of landing fields in communities where they want air mail service?

If our government has any surplus funds to spend on landing fields, why not spend it on emergency fields along the major airlines? If Mr. Betters doesn't think the major airlines have spent huge sums on airports, he ought to investigate.

More airways will be established from time to time, but not where the sit-down strikes on landing fields are holding back the progress of aviation.

BOB HAUSLER,
Arlington, Va.

Thin Papers Used More for Air Mail

W. H. Eaton Gives P O Credit for Educating Public to Light Weight Stationery

Use of light weight stationery for air mail use has increased greatly within the past few years, according to W. H. Eaton, president of Eaton Paper Corp. of Pittsfield, Mass., one of the largest manufacturers of thin papers for air mail. He gives credit to the Post Office Department's educational program for the wider use of correspondence paper especially designed and made for sending by air.

"To those familiar with air transportation and air mail," he said, "the importance of light weight papers, with envelopes that bear special air mail markings, has been demonstrated. To the casual user of air mail, the 'reasons why' for this specially designed stationery may not at once occur, but reason there is. If you have ever been privileged to step behind the scenes of a large postoffice, you have most certainly been impressed with the great quantities of mail handled and the expert time-saving methods used in sorting and dispatching it.

"The mail is run through in vast hoppers, the envelopes standing on their sides or on the ends. Thus, the only way to insure an air mail letter preferred handling all the way, is to employ an envelope that has red and blue markings on the edges, or has its special handling indicated by means of an air mail sticker or some printed designation where it can be readily seen."

In addition, for purposes of handling, Mr. Eaton points out that it is economical to use thin paper because of weight limitations for each six cents of stamps. Air mail to foreign countries, or even the islands in the Caribbean Sea, require postage based on the half-ounce or the gram rate. To manufacture paper combining light weight with toughness and opacity required considerable research, he said, and represents a triumph of the paper industry.

Light weight papers are not new, however, for Mr. Eaton says that messages were sent by carrier pigeons several centuries ago, while in the siege of Paris in 1870 messages were floated down the Seine in tiny tubes. When mail was sent by balloons the weights were restricted and thin paper was used.

"These papers have also served all countries during recent wars," he said, "when secret documents or messages were frequently printed or written on light weight papers as essential in facilitating their delivery."

"But long, long ago, before the advent of the transcontinental railroad, the Pony Express carried the mails across the plains in this country in face of danger from the Indians and other hazards. Since the saddle bags of the intrepid Pony Express riders were slung over the hard-pressed horses' backs, the matter of weight was paramount."

PAA Creates Exclusive Ad Dept., Appoints Two

Establishment of a department exclusively devoted to advertising and appointment of Richard C. Walker as advertising manager have been consummated by Pan American Airways. Hubert C. Watson, previously in the company's public relations department, has been named assistant advertising manager.

Walker leaves a business magazine editorship with Industrial Publishing Co., Cleveland. He previously was an account executive and copy writer with Beaumont & Hohman advertising agency and was assistant advertising manager and publications editor of Greyhound Management Co.

Watson has spent three years in Pan Am's Rio de Janeiro and New York offices. Before joining the line he worked successively as an industrial designer, advertising artist and production man with Yale University Press.



Typical of the many special kinds of light weight air mail stationery developed by the Eaton Corp. is the portfolio shown above made for the Dixie Clipper on Pan American's Atlantic service. See story, col. 4.

Oliver Parks Expands Activities; Heads Two Civilian Flying Schools

With the recent establishment of the Alabama Institute of Aeronautics at Tuscaloosa, Ala., Oliver L. Parks, president of the 12-year-old Parks Air College in East St. Louis, became head of two of the civilian flying schools selected by the War Department for primary training of military flying students in connection with the Air Corps expansion program.

Parks, a veteran in aviation, was born in Minonk, Ill., June 10, 1899. After being graduated from high school, he enlisted in the Marines, spent a year in Santo Domingo and later served 15 months in France. Following three years of college and university, he entered the automobile sales field in St. Louis, leading all city salesmen for four years in units sold.

During this time, Parks became interested in aviation, learned to fly, bought and sold war-time Jennys, gave sightseeing flights and flight instruction. On Aug. 1, 1927, he organized Parks Air College which two years later was approved by the Department of Commerce as a transport, limited commercial and private flying school.

On Feb. 1, 1939, Parks organized the Alabama Institute of Aeronautics and leased the Hargrove Van de Graaf Airport at Tuscaloosa for eight years with an option of 12 additional years. The Institute gave CAA flight training to 30 University of Alabama students, (being the first school to complete the training) and recently was approved by the CAA as an advanced ground and flight school. Parks Air College and the Institute are separate corporations, independent of each other, the only

factor in common being that Parks is president of both institutions and owns 51% of each company.

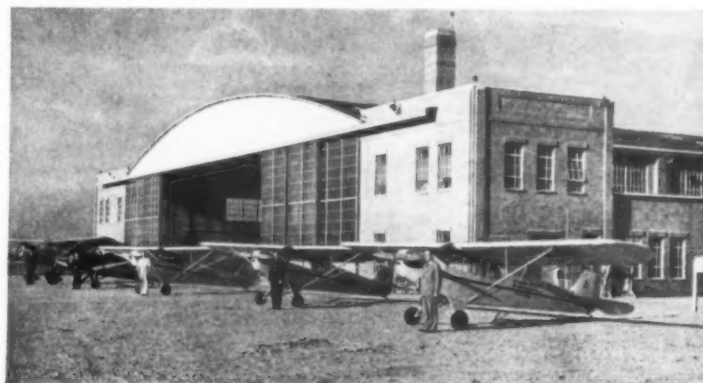
Recent expansion moves directed by Parks have seen the start of construction of a 56-man dormitory at Tuscaloosa, a 53-man dorm at Parks Air College, and a new aeronautical engineering school building at the latter institution. The school building will house the entire engineering division, making available enlarged classroom facilities for the cadet training program.

Following announcement of the Air Corps program, Parks on May 9 hired 20 flight instructors, nine ground school instructors and 14 line service men. All the new employees, with the exception of one, are Parks graduates. Each flight instructor holds commercial, instrument, radiotelephone and instructor's ratings. In order to insure uniformity of procedure, each flight instructor is being given 20-30 hrs. of dual instruction, and is then to be sent to Randolph Field for two weeks in the instructors' flight school. All preliminary instructor training is being given at Parks Air College.

Veteran



Oliver L. Parks, president of Parks Air College and Alabama Institute of Aeronautics.



Picture shows the flight line and personnel of the Alabama Institute of Aeronautics, recently established by Oliver Parks at Hargrove Van de Graaf Airport, Tuscaloosa, Ala. Nearest the camera is Walter P. Thorpe, superintendent of the Institute, who has been associated with Parks Air College since its organization.



Frederick H. Roever (left) is superintendent of the professional flight and aeronautical engineering schools at Parks Air College. Roever received a mechanical engineering degree from Washington University in 1931, spent 10 months in the Naval Air Reserve, joining Parks in Oct. 1932. William M. Thompson (center), superintendent of Parks Air College's maintenance engineering school and the approved aircraft repair depot, has been with the school since 1928. During 1920-22 he served in the Air Corps' maintenance department and was in the U. S. Civil Service from 1922-28. Philip C. Wagner (right), associated with Parks Air College since 1928, has been supervisor of flight training since 1934. In Feb. 1939, he was elected secretary-treasurer but still retains his duties as flight supervisor.

May Haizlip With Harte

May Haizlip, wife of the famous racing and test pilot, James G. Haizlip, has joined Harte Flying Service Inc., of Wichita, Kan. A one time winner of the Greve Trophy, she has been flying for 14 years and is said to be the first woman to fly a racing ship and the first to get a transport pilots license. She once taught in Spartan School of Aeronautics and later served as southwestern sales manager for Buhl Aircraft Corp.

CIO Wins Brewster Poll

The NLRB on Sept. 28 announced certification of the CIO—International Union, United Automobile Workers of America, local 365 (AFL), as the sole collective bargaining agency designated by a majority of the production and maintenance employees of Brewster Aeronautical Corp., Long Island City, N. Y., following a secret ballot election held Sept. 7, resulting in a count of 680 votes for the CIO union and 248 votes for the AFL union, with 78 votes for neither.

TWA, PO, ASK MAIL ON EXISTING ROUTE

Request Is Heard Oct. 23 for Kansas City-Newark and Kansas City-Pittsburgh Service

Application of TWA for amendment to its certificate to include mail on its present passenger and property routes from Kansas City to Newark via Chicago and from Kansas City to Pittsburgh via Chicago was heard together with the Post Office Dept. petition for air mail service over these routes, Oct. 2-3, before CAA Examiner Robert J. Bartoo.

Intervening to oppose certification of the Kansas City-Chicago segment for mail carriage by TWA was Braniff Airways, represented by William Denning, attorney, who offered that Braniff could provide all necessary mail transportation between these two points, since it has operated that flight with mail since 1934.

TWA could commence the requested mail service at once without increase in operating cost to the carrier, according to Jack Frye, president, who listed three advantages that would accrue with the new service: (1) more non-stop mail flights between Chicago and New York, since TWA now has two transcontinental flights available that might be used to give better mail service; (2) relief of excessive mail loads on flights of United Air Lines and American Airlines between these two cities which often force the blocking off of passenger space for mail, and (3) faster mail service between New York and Kansas City, and points west, since TWA operates the fastest flight between these points.

Operating at present from Pittsburgh to Chicago, TWA planes must fly via Dayton with total mileage of 471, Frye said, whereas direct routing to Chicago would save some 57 miles and about 30 minutes in time.

Clarence E. Fleming, assistant to the president and air mail manager of TWA, indicated how mail eastbound from Los Angeles over TWA must, under present operations, be transferred to Braniff ships at Kansas City for Chicago, even though TWA planes continue on to Chicago. For expeditious mail service TWA, being chiefly an east-west operator, should be permitted to carry mail through to Chicago without transfer to the planes of Braniff, a carrier interested primarily in north-south traffic, Fleming suggested.

Charles P. Graddick, superintendent of air mail for the Post Office, stressed the need for direct air mail service for Philadelphia, Harrisburg and Pittsburgh, a need which would be met with approval of TWA's application. UAL's AM1 serves Allentown and Cleveland on its transcontinental route, and American's AM7 serves Syracuse, Rochester, and Buffalo, directly, he said, while TWA with its AM2 should bring the needed services to the Pennsylvania cities in the Pittsburgh area. New York-Chicago is one route offering possibilities for competing services without injury to any carrier, he asserted.

Attorneys at the hearing were Gerald B. Brophy and George Spater, TWA; William Denning, Braniff; E. T. Nunneley Jr., CAA, and William O'Brien, Post Office Dept.

Flight School Head



George J. Gruen, head of the flight school and instructor in advanced flight at Parks Air College, was one of the first flight students to receive training at the school. He has given more than 13,000 hours of student flight training since 1928, and his record is unmarred by accidents to himself or students. Gruen now specializes in instrument flight training and also conducts ground school classes in navigation and meteorology.

AMERICAN AVIATION

The Independent Voice of American Aeronautics
Published the 1st and 15th of each month

WAYNE W. PARRISH Editor ALBERT H. STACKPOLE Associate Editor
ERIC BRAMLEY Assistant Editor-Magazine ROBERT H. WOOD Assistant Editor-Daily
GEORGE N. SHUMWAY News Editor JOHN T. SHANNON Advertising Manager
LEONARD EISERER Assistant News Editor F. G. KNIGHT Circulation Manager

Editorial and business office, Earle Bldg., Washington, D. C. Published by American Aviation Associates Inc.; Wayne W. Parrish, president; Albert H. Stackpole, vice president; Edward J. Stackpole Jr., secretary-treasurer, 104 Telegraph Bldg., Harrisburg, Pa.
Address all correspondence to AMERICAN AVIATION, Earle Bldg., Washington, D. C.

Subscription rates—\$3.00 per year, 15¢ per copy; Canada and Pan American countries—\$3.50; all other foreign—\$4.00.

Entered as second-class matter at the Post Office at Washington, D. C., with additional entry at Harrisburg, Pa.

AMERICAN AVIATION DAILY: Published six days each week except holidays, dispatched by air mail. A confidential news letter covering daily developments in aviation and the national capital. \$15 per month, \$180 per year. Service Bureau available to all subscribers. Special telephone District 1681.

Fortnightly Review

(Continued from page 1)

To the 350 or more schools already in the program, a flying course is something very new. There can be little doubt that many colleges have gone into the program with a questioning mind. They hope that their participation will be beneficial. But they will be watching flying now as never before, watching it with critical eyes.

To the Civil Aeronautics Authority it is a tremendous challenge. The Authority has assumed a responsibility which it sought and a responsibility which has brought headaches, 18-hour working days, and the nervous tension of launching something brand new. To execute its self-appointed task, the CAA must exert exceptional care in the selection of personnel, of assuring sufficient supervisory direction, of perfecting its own organization. The paths have not been smooth, but there is no reason to lose confidence that the CAA will be able to handle the program expeditiously. With pilot training in the news, the CAA must be fully aware of the necessity of making good.

The hundreds of operators and instructors who will do the training may not find the pot of gold at the foot of the rainbow, for the simple reason that the pilot program is not being dished out on silver platters. No operator will get rich and most of them will find it difficult to make ends meet if they restrict their efforts to training only those students in the program. They will discover that the program is exactly what it was designed to be: an incentive, an impetus, an aid. It certainly is not a subsidy. The operator must develop supplementary business if he wants to make good and that is precisely what the whole project was established for.

There have been internal defects in the organization set up to do the job, but these defects probably could have been expected in view of the short time available to get organized. The supervision is being smoothed out with apparent satisfaction.

The research program, authorized by the Act which set up the pilot training project, can be a genuine contribution to aviation if directed with intelligence. The medical research conducted by United Air Lines' laboratory, by Northwest Airlines and the Mayo Clinic, the Harvard Fatigue Laboratory and other institutions, have done much to delineate the relationship of medicine and flying. Most of the research, however, has been devoted to airline flying, and now the Authority promises to find out something about the role of psychology and physiology in the "average man" who is just a private flyer.

Pilot training on a national scale is a departure for U. S. aviation. It is a challenge both to the Authority and to civil aviation. They are both on parade.

It Isn't Subsidy

ONE of the engaging features of our modern life is the labeling of groups of people, events and individuals. At the beginning of the Roosevelt administration the phrase "brain trust" was coined and there was no possible way of removing this phrase from newspaper headlines, and from history, once it had caught on. The word "boondoggling" was a common term for WPA projects and was used to such an extent that it covered not only bad projects but good ones as well. The idea of labeling is a common sport engaged in with much zest by newspaper reporters and headline writers.

Aviation has suffered under one label which is requiring much time to remove. That is the word "subsidy" as applied to the airlines. When commercial carriers first began transporting mail by air, they were, it is true, subsidized. One heard much of "the air mail subsidy." Today the airlines are not being subsidized but one still hears very frequently about the huge government subsidy which goes to the air transport industry. Congressmen, newspapermen, many air travelers—all talk of the air mail subsidy. That is why it is so difficult to get increased appropriations from Congress—because of the prevalent idea that the air mail is costing the government money. They fail to see that government appropriations are simply investments which come back with dual returns. Not only does the money come back in the form of stamp purchases but the public has been rendered a valuable service. One does not say that he is helping to "subsidize" General Motors when he buys an automobile, for the purchaser receives something for his money. If the Post Office Department pays out \$15,000,000 in air mail payments to airline contractors and receives back \$15,000,000 in air mail stamp purchases, this certainly is not subsidy.

But the label of subsidy remains to confound aviation and to confuse the issues.

One of the finest statements made to date on this false label of subsidy was made by Robert H. Hinckley, chairman of the Civil Aeronautics Authority, in a national radio talk a few months back. One paragraph is worth repeating at this late date because of its concise summary. Chairman Hinckley said:

"Air transportation has a status similar to that of some other classes of mail service for which it is traditional to pay amounts sufficient to insure that they will be adequately performed, even though the expense thereby incurred exceeds the postage on mail that is carried. One sometimes hears the word 'subsidy' used as if all payments for the carriage of mail by air could be properly so described. To pay the sum necessary for the proper maintenance of a necessary public service would hardly seem to be a subsidy in any event; but certainly it would be absurd to describe as subsidy the amounts paid for the maintenance of a service which automatically and at the very same moment brings most of its cost back to the Treasury in Washington. That part of the pay for carrying air mail which is covered by the postage on letters does not come from the government, but from the people who mail the letters. The government is merely the channel of transmission, and that is not subsidy."

Football Teams and Forest Fires

AIRLINES are discovering that scheduled flights are only a part of the operating possibilities in air transportation. A challenge to traffic salesmen lies in the use of transports to carry football teams to distant points for important games. Late in September Transcontinental & Western Air Inc., scored a "beat" when it signed up the University of Pittsburgh Panthers who had a game scheduled in Seattle, Wash., with the Washington Huskies. Two DC-3's were chartered for the trip and the TWA news bureau did not omit to publicize the fact that transportation of football teams by air means more touchdowns. Long and tedious train rides cannot help but be a tiring factor; the airplane hops over the country in a few hours. Football, basketball and baseball teams all offer sales possibilities if round-trips are assured.

Charter flights for conventions seem to be increasingly in favor as well. Late in September American Airlines transported 21 representatives of various Chicago firms served by the Master Electric Co., of Dayton, O., from Chicago to Dayton and return, all accomplished easily in the course of one day with plenty of time for the business men to inspect the plant and attend a luncheon. No loss of business time! TWA also carried in September a ship load of delegates from New York to the National Foremen's Association meetings in Pittsburgh.

But that isn't all. Domestic airline ships are being used for a variety of purposes. Last month fire fighting experts of three counties went aloft in a chartered TWA transport to correlate efforts to combat forest and brush fires in California. With 10 mappers and transportation experts aboard, the ship flew over 1,000 square miles of territory to survey fire fighting equipment and to map plans to rush strong fire-

Obituary

JACK ALLEN, 24, pilot for Star Air Lines in Alaska, was killed Sept. 11 when his plane crashed between Ophir and Takotna.

MAJ. HUGH ALBERT BIVINS, 43, of the Air Corps at Wright Field, Dayton, O., died at his Wright Field office on Sept. 30.

GEORGE DAWS, 38, author, newspaperman and aviation writer, died in New York on Oct. 2 following a brief illness. Before he was taken ill he and Dick Merrill, trans-Atlantic flyer, had nearly completed a book to be entitled "How to Be an Aviator." A member of the "New York World-Telegram" staff from 1931 to 1936, Mr. Daws wrote a series of articles on conditions in the U. S. air force. Before that period he was sales manager for Standard Aircraft Corp., Paterson, N. J.

EAL Flies LSU 3,000 Mi.

What is believed to be the longest round-trip flight—nearly 3,000 miles—ever made by a football squad for a grid game started at New Orleans on Oct. 5 when the Louisiana State University Tigers enplaned on two sections of Eastern Air Lines' "Tiger Special," enroute to Worcester, Mass., where they played the Holy Cross eleven on Oct. 7.

fighting units to stamp out fires as soon as they are reported.

Football teams, sales meetings, conventions and fire-fighting—four diverse activities not related to the operation of routine passenger schedules. But all four are only a few of the multitude of social and economic uses of the airplane in serving commerce and the public.

What Others Say

Perhaps the highest compliment to American civilian aviation is paid by foreign countries. Fifty-five foreign airlines use our airplanes and fly more than 150 of our American-made airliners. Several foreign nations which build their own planes use American-made engines. Others use our accessory products such as our propellers, radio, flight and navigation instruments. Our successful foreign markets for our various aviation products are the highest tribute to the efficiency of our planes, our engines and our accessories.—*The Command and General Staff Military Review, Ft. Leavenworth.*

Adams on Leave; WAE Modernizes Equipment

Alvin P. Adams, president of Western Air Express, at his own request was granted a five-months leave of absence by the board of directors at the meeting held Oct. 6 at Burbank, Cal. Commenting on the move, Charles Boettcher, chairman, said Adams made the request in order to devote his entire time to personal affairs. Leo H. Dwerlkotte was elected vice president to take over Adams' duties as administrative head in his absence.

Dwerlkotte reported that the company's position has the "brightest outlook in years," with revenue passenger miles for the first three-quarters at 8,451,939 as compared with 7,168,997 for the same period in 1938, indicating a 17.9% increase.

The board of directors also voted final approval for complete modernization of all flying equipment at an estimated cost of \$210,000. New engines and equipment have been ordered for installation within the next 45 days.

Aero Bookshelf

AIRCRAFT YEAR BOOK FOR 1939. Edited by Howard Mingos and published by the Aeronautical Chamber of Commerce, 30 Rockefeller Plaza, New York City. Profusely illustrated. 580 pp. \$5.00.

Better late than never, the chamber's 21st annual edition appears some months behind schedule this year, but it can be said in all justice that this year's edition is "bigger and better than ever". It is one of those books with a multitude of values and uses, a collection of a vast array of material on every possible phase of aeronautics. Sixty-two pages larger than last year's volume, it abounds with a photographic review of the year, three-way drawings of airplanes, statistics, and much other reference material. As usual, Editor Mingos has not attempted to add needless color and fluff; he sticks to concise factual presentations with some well chosen comments and conclusions. The fly-leaf casually boasts that the year book is "a recognized standard authority"—and indeed it is. This year's edition is most welcome. —W. W. P.

PRIVATE PILOTS HANDBOOK, by Chambliss and McDonald. Published by Aerotext Publishing Co., New York; 130 pp.; \$2.50.

Here is a book for the desk of every private pilot. Written in lucid, interesting style, it covers every subject required by the ordinary private pilot in his pursuit of aeronautical knowledge. In addition to the usual chapters on navigation, meteorology, civil air regulations and the like, it contains

Miller to Servair

Raleigh, N. C.—Truman W. Miller, district airport engineer for the CAA for the last four years, resigned his position Oct. 10 to become operations manager for Servair Inc., operators of the Raleigh airport. With the CAA Miller worked in North and South Carolina, Georgia and Tennessee. He has been flying for 13 years and holds a reserve pilot's license in the Army.

some essential suggestions on what NOT to do in the air, and if every private pilot would read these suggestions and take them to heart, the crack-up data assemblies by the CAA would suffer a marked decline.

All in all, the "Private Pilot's Handbook" is a volume for every neophyte airman to own and keep close to him during the initial months and years of his flying experience. And even those more advanced pilots who believe themselves to be fully informed on every aeronautical subject might well spend a little time in going over the material in this text. —A. H. S.

THE AIR ALMANAC (1939 Oct.-Dec.), *Weems System of Navigation*, Annapolis, Md. \$1.25.

Of value to the airman and mariner alike, this compendium for the navigator has been published in this country by Comdr. P. V. H. Weems under license from the British government. The almanac was designed by Comdr. Weems in 1933 and published in the U. S. In 1934 it was merged with the Nautical Almanac and in 1936 the British accepted the almanac idea and improved upon it. Failing to obtain official publication of the almanac in this country, Comdr. Weems has published it privately.

21st

NEW ANNUAL EDITION

21st

The AIRCRAFT YEAR BOOK for 1939

Edited by HOWARD MINGOS

580 PAGES — 14 CHAPTERS

STATISTICS AND REFERENCE TABLES

HUNDREDS OF ILLUSTRATIONS

The Current Story of Air Power, Aviation in the United States, The New National Defense, The Army Air Corps, The Navy Air Forces, Coast Guard Aviation, Governmental Aeronautical Activities, Training and Education, Notable Flights, Air Transport, Aerial Service, Private Flying, Airways and Airports, State Aviation Activities, New Things in the Air, What the Manufacturers are Doing.

\$5.00 Postpaid

in U. S. A. and Canada—Elsewhere \$6.00

Your Own Bookseller or the Publishers

AERONAUTICAL CHAMBER OF COMMERCE OF AMERICA, INC.

30 Rockefeller Plaza

New York, N. Y.

THE C.A.A. RECORD

(Applications, Hearings, Dockets)

CERTIFICATE GRANTED

Pan Am Gets Bermuda Certificate

Pan American Airways on Oct. 5 was granted a "grandfather" certificate for the route between New York and Hamilton, Bermuda, except that Baltimore, Norfolk or Charleston may be used as the terminal point instead of New York when weather conditions render it necessary. Pan Am will be allowed to operate from Baltimore to New York to Bermuda until North Beach Airport is completed.

APPLICATIONS

Trans-Canada Asks Toronto to N. Y., Detroit

Trans-Canada Air Lines has filed applications with the CAA for permission to fly between Toronto and New York and Toronto-Detroit. Complete story on page 19.

Dixie Airlines Files Application

Dixie Airlines on Oct. 5 filed application with the CAA for a mail, passenger and express route between Pittsburgh and Atlanta via Wheeling, Charleston, W. Va., and Knoxville, and between Birmingham and Knoxville via Chattanooga. Complete story on page 13.

American to Ask Lubbock Stop

American Airlines on Oct. 5 informed the CAA's docket section of its intention to amend its application for a San Diego-Oklahoma City route to include Lubbock, Tex., as a stop.

HEARINGS

Houston-Louisville Hearing Ends

Continued hearing on applications of Braniff Airways, Chicago & Southern Air Lines and Eastern Air Lines, for Houston-Memphis-Louisville service concluded Sept. 30. Story on page 19.

Pan Am Seeks San Francisco-Auckland

Opening Oct. 4, hearing with Pan American Airways Co. of Nevada seeking San Francisco to Auckland, via Los Angeles, Honolulu, Canton Island and Noumea, New Caledonia, is still in progress at time of writing. Included in proceeding is the Postmaster General's petition for mail over this route. Complete story on this page.

TWA, PO, Ask Mail Service

Hearing was held Oct. 2-3 on application of TWA for amendment to its certificate to include mail on its present passenger-property routes from Kansas City to Newark via Chicago and from Kansas City to Pittsburgh via Chicago. The Post Office Dept. also requested the service. Complete story on page 15.

Trans-Southern, Braniff Hearing

Hearing opened Oct. 2 before CAA Examiner F. A. Law, Jr., on the applications of Trans-Southern Airlines and Braniff Airways for a route between Amarillo and Atlanta via various intermediate points. Complete story on page 12.

ORDERS

Railway Express Directorates

Interlocking directorates involving Edward Engel, Fannin Charske and Railway Express Agency have been temporarily approved by the CAA. Engel and Charske have taken the places of Samuel Bledsoe and Carl Gray, both deceased.

REA Brief Date Extended

Deadline for the filing of briefs in the Railway Express Agency "grandfather" case has been extended to Dec. 1. Several lines have indicated intention to express their views on the express situation (AMERICAN AVIATION, Oct. 1)

Calendar of Hearings

Oct. 18—Braniff Airways, American Airlines, on Braniff's petition for review of certain actions of Postmaster General and its complaint against "certain unfair practices and methods of competition by American Airlines."

Oct. 23—C. Coburn Darling, Canadian Colonial Airways, approval of interlocking directorates.

Oct. 23—Pan American Airways Inc., Panama Airways (PAA), Uraba, Medellin & Central Airways (PAA), "grandfather" applications.

Oct. 26—Pan American-Graze Airways, "grandfather" application.

Oct. 26—LaMotte T. Cohn, TWA, approval of interlocking directorates.

Oct. 26—Delta Air Corp., Pennsylvania-Central Airlines, Southern Airlines, new routes serving Cincinnati, Knoxville, Lexington, Atlanta, Chattanooga, Birmingham, Meridian, New Orleans, Augusta, Savannah, Brunswick, Pittsburgh, Charleston, Nashville, Memphis, Columbus, Dothan and Pensacola.

Oct. 30—American Export Airlines, application for trans-Atlantic route.

Oct. 30—American Airlines, Marquette, investigation of contracts between the two companies.

Nov. 8—Braniff Airways, Kansas City Southern Transport, new routes serving Kansas City, Joplin, Tulsa, Ft. Smith, Texarkana, Shreveport, Alexandria, Baton Rouge and New Orleans.

Dec. 4—United Air Lines, Western Air Express, on UAL's application for approval of "proposed acquisition of control of, and merger with or purchase of all the assets of WAE."

Dec. 11—Pennsylvania-Central Airlines, new route between Knoxville and Norfolk.

Indefinite—Eastern Air Lines, Missouri Central, Braniff, new routes serving Nashville and St. Louis, and Kansas City, Springfield, Memphis; and MCA's application for Birmingham-Nashville-Evansville-Terre Haute-Chicago; and EAL's Muscle Shoals-Nashville application.

Canadian Contracts Reported

Contracts totaling \$1,500,000 were awarded by the Canadian Dept. of Transport during the first seven months of 1939 for improving Canadian airports and airways, according to *Aeronautical World News*, publication of the Dept. of Commerce Aeronautics Division. Of this amount, about \$1,000,000 was for the improvement of 19 airports.

27 Enroll at Omaha

With 27 students enrolled, the Burnham Miller Flying School at Omaha has purchased seven Piper Cubs for use in its course at the University of Omaha in connection with the CAA's pilot training program. Barney Burnham will be flight instructor, and William H. Durand will conduct ground school classes.

PAA Seeks Approval of Pacific Route to New Zealand via Hawaii

Important step was taken in the expansion program of the Pan American Airways system when proceeding opened Oct. 4 on application of Pan American Airways Co. of Nevada for certification of air service between San Francisco and Auckland, New Zealand, via Los Angeles, Honolulu, Canton Island, and Noumea, New Caledonia. Also considered at the hearing, still in progress before CAA Examiner Francis W. Brown, is the petition of the Postmaster General requesting transportation of mail by aircraft over the foregoing route, Los Angeles excepted because of the frequency of domestic air service between that city and San Francisco.

Juan T. Trippe, president of the carrier, offered three reasons why the proposed service should be established. First, the present fastest steamship time between San Francisco and Auckland being 17 days, the new air service covering the distance in four days would net a saving in transit time of 76% between these points. Also, Sydney, Australia, which is 20 days away by steamship, would be brought within five days of California, since two round trips weekly between Auckland and Sydney are expected to be operated by a connecting air carrier. Secondly, he declared the proposed route necessary so that American business men can compete on a reasonable basis with business interests of Great Britain and Europe. London, he pointed out, is only 10 days from Australia via Imperial Airways. Finally, with war in Europe, American business men have an opportunity to increase greatly their share of trade with the Australasia area.

To questions raised by CAA attorney Edward Weld regarding the Los Angeles stop and the justification for new certification of the San Francisco-Honolulu segment already operated by PAA, Trippe gave a three-fold reply. California should be the route terminus, he said, because (1) the trade route from steamship precedent is between California and New Zealand and does not originate at Hawaii; (2) under franchise issued to PAA by the New Zealand government, service is required through to California, and (3) California to New Zealand being a trade route in itself, trade requirements necessitate through operations, for to arrive in Honolulu with a substantial commercial load to be consolidated there with traffic from the Hong Kong service would be entirely unjustified commercially.

Los Angeles as a port of call was described as distinctly advantageous to the carrier because of the city's commercial importance. Steamships stopping at Los Angeles, Trippe stated, pick up 42% of their total outbound traffic there.

Opposing a suggestion by CAA Attorney Robert W. Oliver, that the certificate originate from the existing route at Honolulu, Charles P. Graddick, superintendent of air mail for the Post Office, asserted that such a "stub service" would not operate efficiently. Only a separate certificate for each route will assure reliable service for future expansion, he insisted, citing as a comparable example the instance of Eastern Air Lines which now holds two certificates from Washington New York, one for AMS, the other for AM6.

Estimates of mail poundage for the proposed route, offered in an exhibit prepared by George Grayson, assistant director of the International Postal Service, show 10,400 lbs. per annum between San Francisco and Honolulu, compared with about 3,600 lbs. for the

segment from Honolulu to the New Zealand area. Total yearly mail revenue from the entire service was estimated at \$254,177.90, with an estimated \$78,661.90 accruing annually to the carrier.

Rates for the air mail service, cited by Graddick, are 20¢ a half ounce between the U. S. and Hawaii, 40¢ from the U. S. to Noumea, and 50¢ from the U. S. to New Zealand.

Counsels appearing at the hearing are Henry J. Friendly and Harold B. Kline for PAA, William O'Brien for the Post Office, and Weld and Oliver for CAA.

STAR ROUTE AWARDED

Air Tours Inc., Gets Ohio Line at 62c Per Mile

A star route contract for carriage of mail by air has been awarded to Air Tours Inc., between Port Clinton, Kelly's Island, Put-in-Bay, Middle Bass, and Isle St. George, all in Ohio, according to the Post Office Dept.

Air Tours is the new name of Erie Isles Airways, which has been operating in the above region for some time. Erie Isles was scheduled for a "grandfather" hearing before the CAA on Sept. 29, but the proceeding was postponed pending outcome of P O bids. Because Air Tours was successful, the proceeding will not be held, it not being necessary for star route contractors to have certificates.

Rate under which the Air Tours award was made was 62c per mile for the first 250 lbs. of mail, plus 1c per mile for each additional 20 lbs. Award was made under section 6 of Public Law 486, 75th Congress, known as the experimental law. No other star route air mail contracts are contemplated at present.

AA Would Serve Roanoke

Declaring that American Airlines is "very anxious to serve Roanoke" and that it has no desire to place the city to any unnecessary expense, R. S. Damon, vice president, in a recent letter to City Manager W. P. Hunter of Roanoke, Va., stated that his airline would willingly cooperate with city officials in the effort to scale down the estimated \$286,000 needed to bring the airport up to the CAA standard. Clark Kee, American airport engineer, might confer soon with C. L. Watkins, city engineer, to revise the estimate downward, excluding perhaps improvement items for which there is no urgent need, Damon suggested.



NATIONAL AIRLINES

Miami - Tampa - Jacksonville - New Orleans

He 111 IS STRONG ARM FOR REICH

Bombers Expected to Play Big Part in Combats of Future

Heinkel bombers of one or several variations of type He 111 are expected to play a big part in Germany's air attack on the western front, when and if it is turned loose in large proportions. Although performance specifications have been kept secret for the most part, a special version of the bomber, the He 111U, on Nov. 22, 1937 covered 621 mi. with a 2,200-lb load at a speed of 313 mph.

Based on a transport design in 1935, the machine originally carried two 660-hp. B.M.W. VI chemical-cooled V-12's. With these powerplants, top speed was around 214 mph., and with the earlier Daimler-Benz types of DB 600, the speed was about 250.

Two basic models of the He 111 have been used namely the long- and short-nosed versions. The ship has low, cantilever wings with elliptical outer panels. The center section carries the fuel tanks, and flush riveting is used on the stressed-skin covering.

Daimler-Benz DB 600 or DB 601 plants power the long-nosed version, providing over 1,000-hp. each through three-blade V.D.M. variable pitch propellers. A few of the long-nosed bombers have been powered by Junkers Jumo 211 engines.

The bomb load of about 4,400 lb. is carried vertically. Loading is accomplished from underneath into individual compartments.

Most common powerplants found in the short-nosed version are the latest Daimler-Benz DB 601 or Junkers Jumo 211, ranging in power up to a maximum 1,200 hp. V.D.M. full feathering props are used.

Span of the He 111K is 73 ft. 10 in.; length is 57 ft. 5 in., and height is 12 ft. 9 in. Wing area is 941.5 sq. ft. Speed at sea level is 220 mph., and top speed at 13,100 ft. is 261. Maximum cruising speed is 257 mph., while range at that speed is 1,677 with 2,200 lb. of bombs (normal weight). Under the same load conditions, climb to 6,560 ft. is effected in 8 min.; to 13,120 ft. in 17 min.; and to 19,680

Will Heinkels Crack Blockade?



Pictured at Berlin during a fueling operation at the maneuvers that were a prelude to the start of the current war is a Heinkel bombing plane, of the same type used by Germany to bomb Poland into submission in three weeks. If the war on the western front really gets going, these planes, experts believe, will be used in an attempt to crack the British blockade. (International News Photo).

Trans-Canada Seeks Lines from Toronto to N.Y., Detroit

Applications of Trans-Canada Air Lines for routes between Toronto and New York and Toronto-Detroit via London, Ont., were revealed Oct. 5 by the CAA.

Such applications will be watched with much interest by American operators, because a non-stop operation between New York and Toronto would enable the Canadian company to offer a transcontinental service much faster and shorter than any now flown by U. S. carriers.

The applications state that Lockheed 14-H2 aircraft will be used on the routes and that operations will be visual-contact, day and night; instrument and over-the-top, day and night. On the Toronto-Detroit route, the stop at London will be made when airport facilities are completed at that point.

Trans-Canada has named J. Raymond Hoover, Metropolitan Bank Bldg., Washington, D. C., as its agent to receive all notices, etc., from the CAA.

ft. in 30 min. Service ceiling is 23,950. With 2,200 lb., take-off run is 415 yd., and landing run is 383 yd.

Houston-Louisville Hearing Concludes

Proceeding, With Braniff, C&S, EAL, After Same Route, Drags Through 3½ Weeks

Protracted hearings that opened Sept. 6 on applications of Braniff Airways, Chicago & Southern Air Lines, and Eastern Air Lines, for Houston-Memphis-Louisville service, with intermediate stops at Shreveport, Evansville, and Paducah, dragged through three and one-half weeks before CAA Examiners Francis W. Brown and Lawrence Kesters until Eastern completed its case on Sept. 30. At time of last writing the other two carriers already had given direct testimony.

In presenting Eastern's position, Capt. E. V. Rickenbacker, president, declared that his carrier can offer the best service over the proposed route with a minimum capital expenditure since EAL already serves Houston, Memphis and Louisville. Stating that EAL will offer through service beyond Louisville to Chicago, he added that operations would be conducted with DC-2's until traffic warrants larger equipment. Chicago & Southern, Capt. Rickenbacker accused of attempting to invade territory served by EAL and Braniff. C & S, he said, has "everything to gain and nothing to lose," whereas EAL will be the heaviest loser if either of the others gets the route. Both of them, he indicated, would be operating into a dead-end at Louisville. Paul Brattain, EAL vice president and general traffic manager, later pointed out that by serving Paducah, Evansville, Louisville, Indianapolis and Chicago, EAL could relieve the present "bottle-neck" north of Louisville.

Charles Rheinstrom, American Airlines vice president-sales, intervened for that carrier in opposition to granting a certificate on the Memphis-Louisville segment. A Memphis-Louisville service, he asserted, is not required in the public interest, and it would affect American's AM22, Cleveland-Columbus - Dayton-Cincinnati - Louisville-Nashville, and AM23 which includes Memphis and Nashville as intermediate points.

Counsels for the parties were Roger J. Whiteford, Braniff; Amos Culbert, C & S; Gerald B. Brophy, EAL, and Hubert Schneider, CAA.

Miller Forms Company

Frank J. Miller, flying service operator of Nashville, Tenn., has become a CAA inspector and has formed Miller Flying Service Inc., to carry on the operation of flying activity in Nashville which he formerly headed. Ben Simpson will serve as chief pilot in Miller's new organization.



America's Fastest Air Line Links Colorado with the East-West-South

Now Continental offers direct, time-saving connections to Pacific Coast cities—to Dallas and the South—to Kansas City and East. "America's Fastest" links Denver and the Rocky Mountain West with all the Nation.



"Tips on Texas"-No. 2

The making of newsprint paper is no longer an isolated industry of the far-away, frozen North. Lured by cheap power and water transportation, many huge paper mills have "gone to Texas" . . . locating nearby one of the world's greatest sources of pulp supply, in East Texas.

Thus, greatly diversified industry of all kinds adding new wealth to the fabulous "big three" that had already built an empire—cattle, cotton and oil!

Better "take a tip," and "make a trip to Texas" on fleet Braniff wings—overnight!



GREAT LAKES TO THE GULF



Chamber's 1939 Year Book Reports High Wages and Heavy Research Costs

Research and development work in the aviation industry actually cost the industry 63% more than its net profit for the five year period 1934-1938, according to "The Aircraft Year Book for 1939," edited by Howard Mingos and just published by the Aeronautical Chamber of Commerce.

Another highlight of the book (see review on page 17) was the conclusion after much research that 36,000 employees were hired by the manufacturers of planes and engines in 1938 and that the average shop employee in the airplane plants received an annual wage of \$1,550.

Mingos credited the raiding airplane with being "the most persuasive force in international relations" and pointed out that "any nation desiring to preserve its liberties must be prepared to defend itself successfully; and while arming on the ground and on the sea, it must be especially prepared to defend itself in the air."

During the five calendar years 1934-1938, the airplane, airplane engine and propeller manufacturers of the U. S. spent \$44,000,000 on research and development work, he said.

"As a result of the industry's heavy

investment in technical development, it has continued to produce airplanes of recognized superiority throughout the world. That is evidenced by the large volume of sales abroad despite the most intense kind of competition by some foreign industries which have been aided by their own governments with liberal subsidies and credits.

"Our exports amounted to \$143,000,000. That was 30.6% of the total. Commercial sales inside the U. S. aggregated \$107,000,000 or 22.8% of the total. From that it will be seen that our combined commercial domestic and export sales amounted to \$250,000,000, or 53.4% of the total. In other words, more than half the industry's business has been outside the military and naval services of the U. S."

Forty-four cents of the average sales dollar in airplane and engine manufacturing was paid to shop labor, the volume says, while the remaining 56 cents was apportioned among offices and other employees, management, raw materials, tools, plant upkeep, repairs, sales promotion, research and development, taxes and depreciation, and profits, if any.

Chief and Assistant

M. A. Crowder (left) on Oct. 4 was appointed chief of stations for Pennsylvania-Central Airlines, it was announced by C. Bedell Monro, president. In the newly formed post Crowder will be responsible for supervision and operation of each of PCA's 20 stations in eight states and the selection, train-



ing and efficiency of all station personnel. Assisting Crowder will be Edward Sullivan (right), former district traffic manager for PCA at Cleveland.

Crowder joined the line in 1932 as a dispatcher and two years later he was made station manager at Washington, a post which he held until his new appointment. Sullivan in 1934 became a PCA passenger agent in Washington and later served as d. t. m. in Washington, Pittsburgh and Cleveland. Both Crowder and Sullivan will make their headquarters in Pittsburgh.

Parks Grads to AIA

Parks Air College graduates recently added to the staff of Alabama Institute of Aeronautics of Tuscaloosa, Ala. are S. Franklin Gammon, as instructor of airplane engines, and James Christopher, Jesse C. Orender Jr., Paul L. Rider, and J. Sam Wilson, in line maintenance service.

United Chiefs



O. C. Richerson (left), assistant manager of operations of the Denver-Pacific Coast division of United Air Lines, discusses procedure with S. V. Hall, recently named manager of operations for the area.

Airline Personnel

Irvin R. A. Cumming, former Boston-Maine station mgr. at Houlton, Me., has been promoted to station mgr. at Bangor, Me.

Bruce Mitchell, formerly of TWA's station personnel at Wichita, recently accepted a station manager post with Continental at Pueblo. "Ben" Donnelly, TWA passenger agent from Winslow, was transferred to Wichita by the line.

Former Boston-Maine agent at Manchester, N. H., Gordon B. Kennington has been promoted to traffic representative at Bangor.

Eastern pilots recently transferred to Newark are Capt. W. T. Babbit, W. B. Inman Jr. and R. L. Williamson and Pilot H. A. Frese. Pilot C. J. Schuster has been promoted to captain in Newark.

J. A. "Jack" Wright, station mgr. for United at Camden, has been appointed chief passenger agent for the line at NY Municipal Airport (North Beach.) Merle I. Gallagher, Iowa City station mgr., will succeed Wright in Camden. Wally L. Fagin, station attendant in Des Moines, succeeds Gallagher.

Walter Jones is now captaining one of PAA's flying boats from Miami to points in the Caribbean and south Atlantic.

Newly appointed Braniff city traffic manager at Wichita is Lang Reid Jr., University of Virginia graduate.

Barry Mohun, transferred from NY, has joined the EAL Washington staff.

New member of United's traffic staff in Vancouver is H. Bryan Renwick.

N. A. Nelson, former Boston-Maine station mgr. at Augusta, Me., has been made district traffic representative at Portland.

Nora Walsh, formerly of EAL's traffic dept. at 1775 Broadway, NY, has been replaced by Myra Pollard.

Carroll Hinners recently was transferred from Peoria to Dallas by American to work for sales in off-line territory.

Two employees of PAA's western div. traffic dept., Carlos Mouyones and Alexis Roozard, were transferred recently—Mouyones from Guatemala to Panama City and Roozard from Panama to Cristobal, C. Z.

Former Boston-Maine captain, J. H. Patterson resigned recently to join the inspection staff of the CAA.

American First Officers L. E. Burns, C. W. Hutchinson and R. A. Gay have been transferred to Nashville from Memphis. First Officer Fred Jeberjahn left Memphis for Chicago, and Capt. C. M. Hefner was moved to Newark from Memphis. Mechanic Gordon Moore recently transferred to Memphis from Ft. Worth.

Newcomers to TWA's Newark staff are Chet Turner, Frank Zimmerman and Chuck Lown, couriers.

S. R. Newman of United's traffic office has succeeded N. B. Rader as d.t.m. in Portland. Rader was appointed interline traffic mgr. at general offices, Chicago.

Miami EAL notes: From the Army Air Corps, J. G. Morris recently joined the line as pilot. New additions are E. C. Adams and Charlie Miller. C. S. Field has taken a new job in Brownsville. Virgil Owens, former mail clerk, has been transferred to the stockroom, being replaced by Gene Smith. New flight steward is Ed McAndrews.

Lloyd E. Hazen of Newton, Mass., has joined Boston-Maine's flight personnel as first officer.

A native New Yorker, Donald W. Cole has been employed as a pilot for Eastern. He is stationed at Newark.

Elmer Jones from Chicago, Allan Messonnier from Pittsburgh and Fred Elsner from Cincinnati have joined AA's NY city ticket staff.

Robert P. Gandy recently joined TWA as co-pilot, flying the Kansas City-Albuquerque route.

New reservation clerks for Boston-Maine at Boston include Miss Betty

Coggins of Burlington, Vt., Bernard Lavoie of Winthrop, Mass., Fred Way of Winthrop, Mass., and John Tillson of Providence, R. I.

Emory Johnson has been placed in charge of industrial classification of United's sales staff in San Francisco.

H. B. Wharton, former Eastern courier, is now transportation agent for the line in Richmond.

John A. Zimmerman, former district traffic representative of Boston-Maine at Concord, N. H., has been promoted to traffic representative for the system and assigned to the headquarters office at Boston.

New radio operators in American's communications dept. are: Henry W. Sarnowicz, jr. radiotelephone, assigned to Cincinnati; John J. Sefranek, jr. radiotelegraph, Newark, and N. L. Radford, jr. radiotelegraph, Ft. Worth. Operator L. D. Johnson has been transferred to Washington from Newark. First Operator Newt Taylor of Washington was assigned to Chicago as Link Trainer radio instructor, assisting Capt. Bill Lester. R. H. Wisenbaker has been promoted to replace Taylor at Washington.

Leslie Neil, formerly in charge of the counter in United's Seattle office, has been made outside salesman.

Fred McNaughton of Caribou, Me., has joined Boston-Maine as agent at Portland.

Everett N. Wikoff recently joined American's Cincinnati reservations staff, having transferred from Louisville. New Louisville man is Andrew B. Burkhardt.

Joseph Tracy, former Boston-Maine agent at Bangor, Me., has resigned to become chief pilot of Bangor Flying Service.

Addition to American's staff in Boston is Albert Fewer.

Imperial Revises Schedule

Revised schedule of Imperial Airways Ltd. for the Empire route to Australia, South Africa, and East Africa indicates that two services weekly will operate each way between England and Australia instead of the thrice-weekly service before the war. Flights to South and East Africa will be once weekly instead of twice.

Round-the-World Commemoration

Marking the 15th anniversary of the completion of the first round-the-world flight by three Air Corps planes, aviation leaders gathered at Pittsburgh on Sept. 28 at a dinner dance conducted by the Aero Club of Pittsburgh. All six airmen who participated in the flight and who landed at Seattle on Sept. 28, 1924, are still engaged in aviation, though only one—Maj. Lowell H. Smith, the world flight commander—remains in Army service. Guests of honor were Leslie P. Arnold, vice president of Pennsylvania-Central Airlines, and Jack Harding of Pump Engineering Service Co.

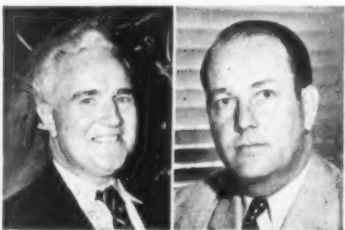
Left to right in the picture are Clifford A. Ball, president of the Aero Club; Mr. Harding, a participant in the 1924 flight; Miss Helen Richey, noted Pittsburgh girl flyer; Mr. Arnold, a flight participant, and R. G. Lichiel, PCA treasurer who presented Harding and Arnold the plaques they are holding, on behalf of PCA.



Braniff Appoints Branson, Murphy

Two appointments announced recently by T. E. Braniff, president of Braniff Airways, were those of Oliver P. Branson, who takes the newly created position of assistant to the president, and Comdr. J. A. Murphy, who succeeds W. M. Clough as purchasing agent for the line. Clough resigned recently to take a position with Aircraft Industries Inc.

Murphy, retired from the Navy, until recently was executive officer of the U.S.S. *Oklahoma*. Being graduated



Murphy

Branson

from the U. S. Naval Academy in 1909, he specialized in engineering and administration during his naval career. Until he moved to Dallas to take over his new position, he has maintained a home in Carmel, Cal.

Branson joins the Braniff organization following several years of investment and banking experience. He will make his office in the Oklahoma City executive headquarters of the line.

Resigns to Join CAA

Harold Howard, former assistant station manager at the Butte, Mont., airport and until recently station manager at the Great Falls (Mont.) airport, has resigned the latter post to work for the CAA airway traffic control division at Burbank, Cal.



Takes you home on an invisible Radio Path

AIRCRAFT RADIO COMPASS

AVIATION RADIO SECTION, RCA MFG. CO., INC., CAMDEN, N. J. • A SERVICE OF RADIO CORPORATION OF AMERICA



Braniff Transports Will Introduce New Travel Luxury

Miss Jeanne Braniff, daughter of T. E. Braniff, president of Braniff Airways, has been commissioned by her father to collaborate with the manufacturer's designers and to supervise the interior decorating of the fleet of four new Douglas DC-3's recently purchased by Braniff now under construction at the Douglas Aircraft plant at Santa Monica, Cal.

In the picture Miss Braniff is shown with Douglas project engineer Dan



Gilmore in the hull of one of the ships. Plans for the new transports call for a distinctive design of colors and fabrics which, Douglas and Braniff officials state, will introduce new luxury for air travelers.

"Interiors of the new fleet will feature colors and fabrics never before used in aircraft construction," says Miss Braniff. "Everything will be bright and cheerful, yet the composite effect is designed to create an atmosphere of dignified restful comfort."

PCA METEOROLOGIST

O'Keefe, NYU Air Transport Engineering Grad, Will Headquarter in Pittsburgh

Appointment of Daniel O'Keefe as chief meteorologist of Pennsylvania-



O'Keefe

Central Airlines was announced Sept. 29 by J. H. Carmichael, operations manager. A graduate of New York University's air transport engineering course, O'Keefe has been associated with United Air

Lines for the last two years as meteorologist at Oakland, Cal., and Newark.

In assuming his new duties at PCA headquarters, Allegheny County Airport at Pittsburgh, O'Keefe said all weather forecasting for the line's operations will be conducted from Pittsburgh. In addition, he is completing a survey of weather facilities along the new proposed routes for which PCA has asked the CAA for permission to operate.

Serving under O'Keefe in the meteorology department is Melvin Stone, a graduate of New York University, and William Coons, graduate of the University of Minnesota.



IS a word every aeronautical engineer knows and understands.

But wastage is also a very important item in advertising.

Advertising rates are based on circulation and when circulation is diluted there is a waste of advertising money.

Advertising to the idle curious and to coupon-clipping boys is all very well as a pastime but if airplanes were built on that basis the fastest airplane today would be about 60 mph.

AMERICAN AVIATION reaches the most concentrated group of executives in aviation today . . . the men who **HAVE** to know what's going on **WHEN** it's going on . . . the men who do the buying.

Your advertising dollar does its most efficient work when it is spent to reach **DIRECT** the men who do the buying.

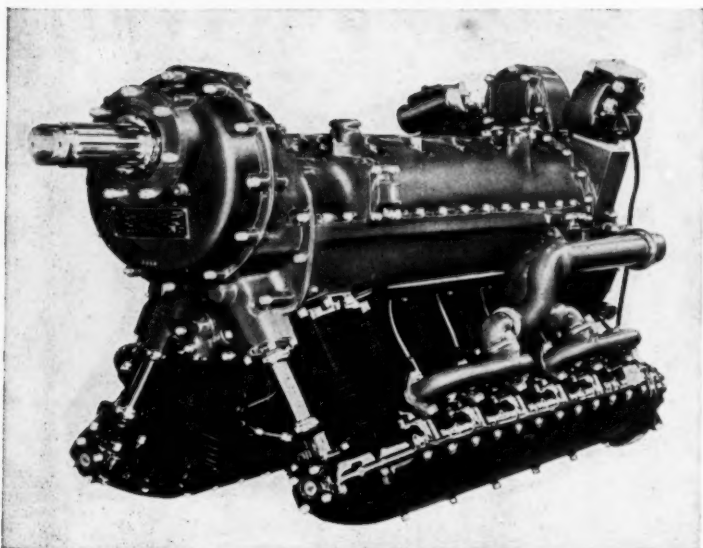
There is no wastage in **AMERICAN AVIATION** circulation . . . It reaches the aircraft and engine manufacturer . . . it reaches the sportsmen pilots who buy and own airplanes . . . it reaches by far the greatest number in commercial air transportation . . . there is no buck-shot appeal . . . **AMERICAN AVIATION** hits the business target.

For 1940 **AMERICAN AVIATION** offers the liveliest, most eagerly read, the most **ESSENTIAL** aviation magazine in America.

P. S.—Advertisers in **AMERICAN AVIATION** are assured of advertising space adjacent to reading matter—and here again there is no wastage of the advertising appeal.

American Aviation

500 H. P. Ranger



Although basically a development of the former SCV-770B-5 engine manufactured by Ranger Engineering Corp., Farmingdale, L. I., the new inverted-V 12 cylinder engine, SCV-770B-6, has several refinements including a change from cadmium-silver to copper-lead steel-backed main and connecting rod bearings. Another is the adoption of a supercharger impeller of a design which has increased efficiency of the supercharger unit. The Approved Type Certificate (No. 207) carries a take-off rating of 500 hp. on 87 octane fuel, this power being available up to 1700 ft. altitude. The overall length of the new Ranger is 61.31 in.; height, 32.25 in.; width, 28 in.

Lee Joins Division of United Aircraft

John G. Lee has been appointed assistant director of research in charge



Lee

of the technical branch of United Aircraft Corp., East Hartford, Conn., it was announced Oct. 2 by Charles H. Chatfield, director of research. The appointment was made concurrently with an expansion of the research division.

Lee received his Master's Degree in aeronautical engineering from Massachusetts Institute of Technology in 1922. Following a year as instructor of aeronautics at MIT he joined the engineering staff of Curtiss Aeroplane & Motor Co. Subsequently he served as project engineer for Ford Motor Co. on the design of the original Ford trimotor transport, and later as project engineer for Fairchild Aviation Corp.

Associated with United Aircraft since 1932, Lee at that time became project engineer for the former Chance Vought Aircraft division. He is vice chairman of the southern New England section of the SAE, and a member of the Institute of the Aeronautical Sciences.

BEECH NAMES SUPT.

R. C. Wilson, Formerly With Douglas and Stearman, Made Factory Supervisor

With experience in aviation dating from 1917, R. C. Wilson recently was



Wilson

appointed factory superintendent of Beech Aircraft Corp., Wichita, Kan. It was in 1917 that Wilson entered the Army Air Corps, learning to fly at Kelly Field and later becoming an instructor in the air mechanics school at St. Paul, Minn.

From 1919 to 1923 he did barnstorming and operated a repair depot at Los Angeles. Later he became a member of the experimental development and research staff of Douglas Aircraft Co., and from 1927 to 1930 was associated with Stearman Aircraft Co., Wichita, as plant executive. He rejoined Douglas and from 1930 to 1939 served as supervisor of the experimental development department and assistant to the superintendent.

Also announced recently were the promotions of three Beech factory employees to supervisory positions. Fred Magruder was made night superintendent; Floyd Heflin, foreman of the fuselage assembly department, and H. A. Schowalter, foreman of the sheet metal dies department.

Fairchild Aircraft Merged With Parent

Fairchild Aircraft Corp. has been merged with Fairchild Engine and Aircraft Corp., its parent, as of Sept. 27, and in the future will operate as a division to be known as Fairchild Aircraft Division.

"No change in the operations and activities will result, nor is there to be any change in management and policy," according to A. F. Flood, treasurer.

"For the past several years Fairchild Aircraft Corp. has enjoyed and maintained a strong financial position which continued to improve throughout the current years," Flood said. "As a division of Fairchild Engine and Airplane Corp., its position will be further enhanced by the resulting position of the merged companies."

Opens Port Restaurant

Edward V. Frecker, restaurant and dairy store proprietor of Columbus, O., recently opened a restaurant in the administration building at Port Columbus Airport. Frecker, owner of an airplane, specializes in the serving of sea foods flown in from the coast.

NLRB Sets Ryan Co. Poll for Mid-October

A poll to be held about Oct. 18 among certain employees of Ryan Aeronautical Co., San Diego, Cal., to determine whether they desire to be represented by United Aircraft Welders of America (Independent) for the purposes of collective bargaining, was announced Oct. 3 by the NLRB. The poll will be held among workers more than 50% of whose working time is spent in oxy-acetylene, oxy-hydrogen and electric arc welding, in gas torch cutting and in the work of welders' helpers.

The United union contended that all welders employed to do fusion welding and all gas torch cutters and all welders' helpers employed by Ryan constituted an appropriate unit. Company employs some 308 hourly paid production and maintenance workers, of which 13 are claimed by the United to be welders and welders' helpers.

The International Association of Machinists, intervening union, contended that welders do not constitute a distinct craft, but are members of traditional crafts performing work of which welding is a necessary part, and that a unit consisting of welders alone is therefore not appropriate. The NLRB pointed out that aside from the United there have been no labor organizations in the plant.

CURTISS WRIGHT TECHNICAL INSTITUTE

GRAND CENTRAL AIR TERMINAL
GLENDALE (LOS ANGELES) CALIFORNIA

ESTABLISHED 1929

AMERICA'S MOST DISTINGUISHED SCHOOL OF AERONAUTICS

SPECIALIZING IN
AERONAUTICAL ENGINEERING
AND MASTER MECHANICS
(NO FLYING IS INVOLVED IN EITHER COURSE)

ENDORSED • by the Industry
ACCREDITED • by Educators and
APPROVED • by the Government

Located in the Heart of the Aircraft Industry • Approved by U. S. Immigration for Non-Quota Foreign Students • Graduates in Demand • For Full Information, Return this Ad with your Name, Age and Address, Indicating Course Desired

MAJOR C. C. MOSELEY

PRESIDENT

AA 10

SIMMONDS

DESIGNERS AND MANUFACTURERS OF SPECIALIZED AERONAUTICAL AND ENGINEERING ACCESSORIES. ASSOCIATED COMPANIES THROUGHOUT THE WORLD

We are pleased to announce this Simmonds Theed Vacuum System for flap actuation. This system enables greatly increased glide control with desirable simplification and weight reduction.

QUALITY • SERVICE



SIMMONDS AEROCESORIES, INC.

551 FIFTH AVENUE
NEW YORK, N. Y.

Notes From Manufacturers

Aircooled Motors Corp.

Syracuse, N. Y.—Company reveals that there is now a TC on a starter for the Franklin lightplane engines. It adds 40 lbs. to the engine, six to the battery, and although it has been considered, it has not been used. It was said the starter's price will be around \$150 retail.

Akron Aircraft Inc.

Akron, O.—Reported with orders for more than 100 planes on hand, company hopes to start turning out four or five two-place ships in the near future. With 14 ships turned out since production started, company rolls two off the line weekly.

Additional production facilities were expected to be available soon. Employment stands at 55, working one eight-hour shift daily.

Distributors in six states have been appointed and inquiries for more are being received at a rapid rate, it is reported.

Barkley-Grow Aircraft Corp.

Detroit, Mich.—A Barkley-Grow TAP1 10-place transport, piloted by Walter J. Carr, carried a cargo of notables to the National Air Races, Cleveland. Among those in the ship were Clara Adams, Mrs. Alva McKey Bryant, Blanch Scott, Maj. Augustus Post, Capt. Horace B. Wild and Miss Viola Gentry.

Beech Aircraft Corp.

Wichita, Kan.—Present backlog is \$1,623,875, which exceeds the \$1,141,398 sales volume of 1938 by 42%. Comparison of current backlog with 1937 and 1938 sales totals is \$787,575 and \$621,084, respectively—increases of 106% and 161%. Much of the 1939 gain consists of orders from the Air Corps and the Navy Bureau of Aeronautics.

Irving Air Chute Co. Inc.

Buffalo, N. Y.—Orders sufficient to keep the company's plants busy for some time are reported signed with several non-belligerent foreign countries since the European war started. The U. S. and foreign plants will manufacture parachutes under the orders. U. S. plant is now operating at near capacity.

Lockheed Aircraft Corp.

Burbank, Cal.—The Tennessee Valley Authority has awarded a contract to Lockheed for a Lockheed 12 six-passenger transport. It will replace another which has been used to transport engineers through the valley. Delivery will be made the latter part of November. (See contract column.)

Company is continuing construction of foreign military planes which will be warehoused for possible future shipment if the embargo is lightened. Squadron Leader James R. Addams, Lockheed representative of the Royal Air Force (Britain), said ultimate dispositions of the planes and the contracts will not be known for some time.

Sale of five model 14 transports to TACA (Transportes Aereos Centro-Americanos Ltd.) was revealed recently. Broadening of freight service throughout Central America to include passengers, the organization, formed in 1929 by Lowell Yerex, now operates 22 tri-motor ships and several smaller planes.

Two 14's were sold to the national air line of Venezuela—Linea Aeropostal Venezolana—for approximately \$180,000, including engines and spare equipment. Planes will be powered by Wright Cyclones and will augment the fleet of Lockheed Electras operated over the system for two years. Announcement, made Sept. 15, said delivery would be made in 90 days.

Company has its biggest backlog in history—\$300,000.

Lycoming Div.

Williamsport, Pa.—It was reported recently that a set-up for authorized Lycoming engine parts & service stations is going ahead for the first time.

Monocoupe Corp.

Robertson, Mo.—Company recently reported the sale of two 90-A Deluxe models to R. L. Attkisson of Indianapolis and Sidney Morrison of Newton, N. C.

North American Aviation Inc.

Inglewood, Cal.—Company is beginning construction of a factory addition by which floor space and production facilities will be increased 50%. Negotiations are under way between NA officials and City of Los Angeles for a long term lease of 15 additional acres

of land adjacent to present property to take care of a further expansion program in the event of an emergency.

During August, 103 completed units were turned out in 23 working days, or an average of slightly over 4½ a day. This was with a day shift of approximately 3,100 employees and a night shift of about 900. Backlog totals about \$32,000,000.

Northrop Aircraft Inc.

Hawthorne, Cal.—Ground breaking ceremonies were observed on Sept. 30 at the site of the contemplated \$500,000 Northrop airplane factory. Plant is expected to be finished by Dec. 24, with production tentatively set for Jan. 1. Capacity will be one plane daily under ordinary conditions and four planes daily under wartime conditions. Building's floor space will total 155,500 sq. ft. Testing runway will be 4,000 ft. wide.

Ryan Aeronautical Co.

San Diego, Cal.—Late contract for approximately \$30,000 from Consolidated Aircraft Corp. calls for several hundred exhaust collector rings. Other orders closed recently for parts & equipment are with Douglas Aircraft Co., Lockheed Aircraft Corp. and the Air Corps. Work in progress represents nearly \$300,000, and the backlog of about \$750,000 is the highest in the company's history.

Vega Airplane Co.

Burbank, Cal.—Engineering reports on the Starliner tests verify all preliminary estimates as to speed and general performance. Vernon A. Dorrell, test pilot & sales mgr., announced.

Following figures were released based on flight with the 6,250-lb. (max. gross) ship's use of the 600-hp. Menasco Unitwin coupled engine: top speed, 220 mph. at 7,500 ft.; speed at 75% hp, 200 mph.; landing speed, 63 mph.; landing distance over 50-ft. obstacle, 1,000-ft. minus ft.; take-off run, 600 ft.; climb, 1,200 ft./min.; estimated ceiling, 23,500 ft.

Dorrell said the Starliner "practically flies itself . . . and is a very easy riding airplane under all atmospheric conditions."

Mac Short, company president, announced recently that the firm has occupied a new \$30,000 assembly hangar in preparation for quantity production of the Starliner. Building, which adds 11,500 sq. ft. area to company's facilities, is corrugated steel structure with saw-tooth skylight roof. A mezzanine floor is used by minor departments.

New hangar adjoins sheet metal fabricating departments where 10 Starliners are under construction. These 10 have been contracted for sale to various airlines and individuals in the U. S. and foreign countries.

Vultee Aircraft Div.

Downey, Cal.—Eighty-five per cent of the required materials have been ordered for the Air Corps contract for Vultee basic trainers (model BT-13).

The Vultee Valiant 51, basic combat, has been released for export. A spare parts order totaling approximately \$300,000 has been received from the Republic of Turkey. It is now in production, together with the Brazilian spare parts order.

The shop part of the Vultee plant expansion program is scheduled to be completed soon.

Waco Aircraft Co.

Troy, O.—Newspapers in Brazil have announced conclusion of negotiations by the minister of war in which the government is licensed to construct Waco cabin planes. Amount involved is said to be \$20,000. The chief of the army air services already has ordered construction of the first five Wacos. Metal frames can be built in Brazil and local wood and fabric are available. Brazil's interest in Waco is believed due to excellent service rendered by cabin planes of this make in the Army's air mail service.

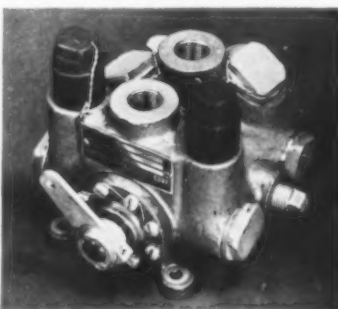
Ryan Advances Balch

Walter K. Balch of Ryan School of Aeronautics, San Diego, Cal., has been advanced to the position of director of technical training and maintenance, with Virgil McKinley assuming Balch's former duties as director of commercial ground school. Basil Morrow, formerly chief mechanic, is now supervisor of maintenance for both commercial and Army flight equipment.

New Hydraulic Valve Employs 2 Governors

Incorporation of a variable flow governor and pressure governor in a new model hydraulic selector valve, known as No. 62008, has been announced by Aircraft Accessories Corp., Glendale, Cal. The valve's flow governor controls the volume of oil delivered to each end of the actuating cylinder for controlling extension and retraction time of flaps.

The pressure governor has two functions which contribute to the efficiency and safety of the aircraft, according to the announcement. "First, since engine driven hydraulic pumps deliver between three and four gallons of fluid per minute and since it is only



necessary to use a part of this amount to complete the extension of the flaps in a given time, the pressure governor performs an important function in returning excess fluid to the fluid reservoir through the pressure control valves," it was said. Volume used and returned is governed by the actuating cylinder's size in relation to work or force required to actuate flaps at a given airplane speed.

Actuating cylinder of the pressure control valve is designed to extend the flaps at an air speed of 120 to 150 mph., a speed which flaps ordinarily

New Refuelling Hose

A new type of airplane refuelling hose made of a special inorganic synthetic rubber-like material, having been tested by major oil companies which have refuelling contracts at various airports, has been announced by the B. F. Goodrich Co. The hose was developed over a five-year period of research to provide a substitute for hosing made of natural rubber which has a tendency to disintegrate in contact with certain oils. It was felt that the possibility of small particles flaking off and passing into the motors constituted a menace despite the strictest possible precautions. Woven into the braid of the hose is rust-proof stranded stainless steel wire which grounds any static electricity which may exist.

Windikator Announced

The Windikator, precision-built instrument and compass for instantly indicating speed and direction of the wind, has been announced by General Communication Co., 677 Beacon St., Boston. All materials used in the instrument's construction are non-magnetic, rust and corrosion-resistant. A diametric reference line inscribed on the non-breakable glass cover permits its use as a hand pelorus. Model A measures wind speeds from 5 to 30 mph.; Model B from 10 to 60 mph. Dimensions are 3½ x 1 9/16"; weight, less than 2 oz.

will withstand, at a given hydraulic pressure. This pressure is controlled by the pressure governor in the new selector valve, and at speeds in excess of the ship's design load, the pressure governor allows fluid to return to the reservoir and the flaps remain closed until the plane's speed is lowered to the safe load of the flaps. This provision holds for a reverse situation where flaps may be extended and the plane's speed increased beyond the safe load of the flaps. In this case, the pressure governor allows the flaps to close automatically.

The corporation announced also that within recent months numerous changes have been made in its hydraulic equipment. Engineers in the industry are advised to write for free engineering service and design helps provided by the company to designers and builders of aircraft.

Choose from the "Cream of the Crop"—BOEING SCHOOL MEN!

Choose your pilots, field passenger agents, radio operators, engine mechanics—or whatever—from the finest products of modern aeronautical training—Boeing School graduates! This modern school, U. S. Gov't-approved in all departments, owned by United Air Lines, trains selected men in 11 serious career courses . . . 17 modern shops and laboratories, 6 different types of training planes, 30 instructors—small classes. 85% of all Boeing School graduates are employed—by 43 companies! Choose the cream—Boeing School men!

BOEING

SCHOOL OF AERONAUTICS

A DIVISION OF UNITED AIR LINES



5000, Hangar No. 5
Airport, Oakland, California

In . . . months we shall probably need the following personnel. Please send us brief biographies of men likely to be available then.

Name Company

Address

Aero Patents

21,198: Internal combustion engine. Romeo M. Nardone, East Orange, N. J., assignor, by meane assignments, to Eclipse Aviation Corp., East Orange.

115,854: Design for an airplane. Flavius Earl Loudy, Hempstead, N. Y. Term of patent 3½ yrs.

116,038: Design for a goggle. Eugene J. Lux, New York, N. Y., assignor to Columbia Protektosite Co. Inc., Carlstadt, N. J. Term of patent 7 yrs.

116,094: Design for an airplane. Clarence L. Johnson, Burbank, Cal., assignor to Lockheed Aircraft Corp., Burbank. Term of patent 14 yrs.

116,206: Design for an airplane. John D. McKellar, San Luis Obispo, Cal. Term of patent 7 yrs.

116,277: Design for an aircraft landing wheel position indicator. Paul F. Bechberger, West Hempstead, N. Y., assignor to Bendix Aviation Corp., South Bend, Ind. Term of patent 14 yrs.

116,326: Design for an Airplane. Peter S. L. West, Brooklyn, N. Y. Term of patent 14 yrs.

417,420 (serial no.): Patent for name "Synchromatic" for aircraft propellers, parts and attachments, by United Aircraft Corp., East Hartford, Conn. Claims use since Feb. 9, 1939.

2,167,000: Aircraft propeller. James V. Mohler, Oswego, Ia., assignor of 17 5/10% to Hyman Levy, Oswego; 17 5/10% to Milford E. McClain; 7 5/10% to Weston E. Jones, and 7 5/10% to Glenn W. Till, all of Charles City, Ia.

2,167,143: Aircraft. Richard J. Thompson, Bakersfield, Cal.

2,167,256: Automatic nose-dive rectifying device for airplanes. Max M. Weiss and Israel Benjamins, Brooklyn, N. Y.

2,167,412: Means for measuring altitude of aircraft. Martin Baesecke, Berlin-Siemensstadt, Germany, assignor to Siemens Apparate und Maschinen Gesellschaft mit beschränkter Haftung, Berlin, Germany.

2,167,414: Stiffened fabric for airplane wings. Wyly M. Billing, Wilmington, Del., assignor to Hercules Powder Co., Wilmington.

2,167,533: Torque compensator for airplanes. Guillermo Solomon, Santiago, Dominican Republic.

2,167,561: Aircraft turret. Felix Amlot, Neuilly-sur-Seine, France.

2,167,601: Airfoil. William K. Rose, New York, N. Y.

2,167,644: Amphibian hull resilient step. Walter S. Diehl, U. S. Navy.

2,167,686: Airplane rib. Karl Schmidt, U. S. Navy.

2,167,687: Lacing attachment for airplane cover fabric. Karl Schmidt, U. S. Navy.

2,167,694: Ignition apparatus for internal combustion engines. Walter J. Spengler, Sidney, N. Y., assignor to Bendix Aviation Corp., South Bend, Ind.

2,167,846: Variable speed gearing. Thomas B. Martin, Horseheads, N. Y., assignor, by meane assignments, to Bendix Aviation Corp., South Bend, Ind.

2,167,891: Engine starter drive. Clinton S. James, Elmira, N. Y., assignor, by meane assignments, to Bendix Aviation Corp., South Bend, Ind.

2,167,972: Protective surface. Richard A. Crawford, Akron, O., assignor to the B. F. Goodrich Co., New York, N. Y.

2,167,985: Vibrating propeller device. Eugene Levy, New York, N. Y.

2,168,012: Protective covering for aircraft surfaces and the like. Harry E. Wamer, Akron, O., assignor to the B. F. Goodrich Co., New York, N. Y.

2,168,094: Safety appliance for airplanes. Angelo Cozzitorto, Fresno, Cal.

2,168,328: Deicing means for airplanes. Walter S. Diehl, U. S. Navy.

2,168,384: Flying object and apparatus for its simulated flight. William F. Barry, Los Angeles, Cal.

2,168,536: Pressure regulating device for aircraft instruments. Dimitry E. Oishevsky, East Orange, N. J., assignor to Bendix Aviation Corp., South Bend, Ind.

2,168,599: Air regulating means. Rex B. Beisel and Albert L. MacClain, West Hartford, Conn., assignors to United Aircraft & Transport Corp., East Hartford, Conn.

2,168,726: Propulsion of aircraft and gas turbines. Frank Whittle, Trumpington, Eng.

2,168,814: Reduction gear. Andrew V. D. Wilgoos, West Hartford, Conn., assignor to United Aircraft Corp., East Hartford, Conn.

2,168,921: Power control. Joseph W. Allen, East Orange, and Herbert W. Graybrook, Roselle Park, N. J., assignors to Eclipse Aviation Corp., East Orange.

2,169,222: Dynamic damper having single support and cam stabilizers.

Roland Chilton, Ridgewood, N. J., assignor, by meane assignments, to Wright Aeronautical Corp., Paterson, N. J.

2,169,243: Supercharger and cooler arrangement. Vinton Hixie, Paterson, N. J., assignor to Wright Aeronautical Corp., Paterson.

2,169,309: Starting mechanism for internal combustion engines. William Wait Jr., Garden City, and Chance M. Vought, Great Neck, N. Y., assignors, by meane assignments, to United Aircraft Corp., East Hartford, Conn.

2,169,443: Airplane undercarriage. James P. Burke, Knoxville, Tenn.

2,169,597: Magneto generator. Walter J. Spengler, Sidney, N. Y., assignor to Bendix Aviation Corp., South Bend, Ind.

2,169,819: Multiple switch. Walter J. Spengler, Sidney, N. Y., assignor to Bendix Aviation Corp., South Bend, Ind.

2,169,849: Aircraft with rotative sustaining blades. Harold F. Pitcairn, Bryn Athyn, Pa., assignor, by meane assignments, to Autogiro Co. of America.

2,169,898: Propeller pulley. Robert A. Minderman, Port Clinton, O.

2,169,982: Device for automatically controlling the fore & aft inclination of aircraft. Gert Zoege von Manteuffel, Berlin-Dahlem, Germany, assignor to Askania-Werke A. G.

2,170,003: Engine arrangement in aircraft. Walter Blume, Brandenburg-the-Havel, Germany, assignor of ½ to Arado Flugzeugwerke Gesellschaft mit beschränkter Haftung, Brandenburg-on-the-Havel.

2,170,087: Airplane indicator. Harry L. McPherson, Memphis, Tenn.

2,170,383: Aircraft recording means. Charles R. Kines, Baltimore, Md.

2,170,458: Light-weight girder, especially for aircraft. Hans Moechel, Friedrichshafen, Badenese, Germany, assignor to Luftschiffbau Zeppelin G. m. b. H., Friedrichshafen.

2,170,731: Directional control & stabilizing apparatus. John T. Rydberg, Harrison, N. J.

2,170,787: Lateral control means for airplanes. William K. Rose, New York, N. Y.

2,170,806: Integral tail wheel and rudder for airplanes. Harold W. Case, Dayton, O.

2,170,824: Propeller protractor. Jay Y. Lichtenwalner, San Diego, Cal., assignor to Pacific Scientific Co., San Francisco, Cal.

2,170,832: Aircraft blind landing system. Henri Chireix, Paris, France, assignor to Compagnie Generale de Telegraphie sans Fil.

2,170,868: Control of motor vehicle clutches. Robert Leslie Neill, Birmingham, Eng., assignor to Bendix Aviation Corp., Chicago, Ill.

2,170,875: Clutch control mechanism. Roy S. Sanford, New York, N. Y., assignor to Bendix Aviation Corp., South Bend, Ind.

2,170,884: Telegraph transmitter. Charles W. Winter Jr., Coconut Grove, Fla., assignor to Pan American Airways Corp., Jersey City, N. J.

2,170,958: Power soarer. Edward F. Andrews, Chicago, Ill.

2,171,005: Speed-responsive device. Charles I. McNeel, Bloomfield, and Melvin E. Longfellow, Newark, N. J., assignors to Eclipse Aviation Corp., East Orange, N. J.

2,171,496: Parachute harness release coupling. George Waite & Harold G. Rogers, Buffalo, N. Y., assignor to Irving Air Chute Co. Inc., Buffalo.

2,171,257: Internal combustion engine. Romeo M. Nardone, East Orange, N. J., assignor to Eclipse Aviation Corp., East Orange.

2,171,265: Aircraft trim indicator. Bert G. Carlson, Freeport, N. Y., assignor to Sperry Gyroscope Co. Inc., Brooklyn, N. Y.

2,171,561: Air navigation & landing system. Frederick J. Hooven, Dayton, O.

2,171,817: Radiator for aviation engines. Herbert Wagner, Dessau and Ludwig Meyer, Dessau-Kleinkuhnuau, Germany, assignors to Junkers Flugzeug-und-Motorenwerke Aktiengesellschaft, Dessau.

2,171,818: Wall structure for aircraft compartments. Herbert Wagner & Justus Muttrav Dessau, Germany, assignors to Junkers Flugzeug-und-Motorenwerke Aktiengesellschaft, Dessau.

2,172,100: Internal combustion engine. Samuel K. Hoffman & Clarence H. Wiegman, Williamsport, Pa., assignors, by meane assignments, to Aviation Manufacturing Corp., Chicago, Ill.

2,172,124: Motive system. Samuel Gilbert, Verona, N. J., assignor to Eclipse Aviation Corp., East Orange, N. J.

2,172,139: Engine cooling means. Donald S. Hersey, West Hartford, Conn., assignor to United Aircraft Corp., East Hartford, Conn.

2,172,333: Sustaining rotor for aircraft. Theodore Theodorsen, Hampton,

GOVERNMENT CONTRACTS

(Awards of \$10,000 and Over)

Release Date Shown

AIRCRAFT

Douglas Aircraft Co. Inc., El Segundo Div., El Segundo, Cal., 9/23, airplanes, \$716,900.50 (Navy).

Lockheed Aircraft Corp., Burbank, Cal., 9/30, Lockheed model 12 airplane, \$51,064 (TVA).

ENGINES, PARTS, ACCESSORIES

Goodyear Tire & Rubber Co., Inc., Akron, O., 10/5, wheel & brake assy., \$96,235.90 (Air Corps).

Curtiss Propeller Div., Curtiss-Wright Corp., Clifton, N. J., 9/28, parts, \$12,691.58 (Navy).

Leece-Neville Co., Cleveland, O., 9/25, generator control panel assy., \$29,500 (Air Corps).

Pioneer Instrument Div., Bendix Aviation Corp., Bendix, N. J., 9/21, compasses, \$13,387.50 (Navy).

Kolsman Instrument Co. Inc., Elmhurst, N. Y., 9/21, compasses, \$20,475 (Navy).

Breeze Corps. Inc., Newark, N. J., 9/21, cartridge starters, \$17,050 (Navy).

Hamilton Standard Propellers Div., United Aircraft Corp., East Hartford, Conn., 9/30, propeller parts, \$25,950.50 (Air Corps).

Hamilton Standard Propellers Div., United Aircraft Corp., East Hartford, Conn., 9/23, blade assy., \$22,000 (Air Corps).

Curtiss Propeller Div., Curtiss-Wright Corp., Clifton, N. J., 9/23, propeller assy., \$134,822 (Navy).

MISCELLANEOUS

International Telephone Development Co., Inc., New York, N. Y., 9/23, radio range, \$15,000 (CAA).

ECA Manufacturing Co., Inc., Camden, N. J., 9/23, tone telegraph channeling equipment, \$26,900 (CAA).

Teletype Corp., Chicago, Ill., 9/23, teletype machines, \$197,653.92 (CAA).

Wesson Co., Detroit, Mich., 9/23, twist drills, \$15,140.13 (Air Corps).

S. Weinstein Supply Co., New York, N. Y., 9/23, builders hardware, \$10,650 (Pensacola Naval Air Station).

The Texas Co. (Puerto Rico) Inc., New York, N. Y., 9/21, aviation gasoline, \$46,360 (Navy).

H. P. Andrews Paper Co., New York, N. Y., 9/30, unsensitized blueprint paper, \$22,914 (Air Corps).

Westinghouse Electric & Manufacturing Co., Washington, D. C., 9/30, parkway cable, \$40,805 (CAA).

Vought-Sikorsky Aircraft Div., United Aircraft Corp., Stratford, Conn., 9/25, services & material, \$24,225 (Navy).

Imperial Brass Manufacturing Co., Chicago, Ill., 10/2, solderless fittings, \$17,062.20 (Air Corps).

Johnson, Drake & Piper Inc., Los Angeles, Cal., 10/2, engine test building at Alameda (Cal.) Naval Base, \$143,700 (Navy).

C. H. Goelger Machinery Co., Dayton, O., 10/5, equipment, \$20,732 (Air Corps).

Incorporations

Canada—Lockheed Aircraft Corporation of Canada Ltd., \$500, Ottawa.

Indiana—Phillips Aeronautical Corp., Evansville; to foster inventions and improvements pertaining to aviation and to buy, sell and deal in airplanes or appurtenances thereto; 100 shares, n.p.v. Incorporators: Cecil R. Phillips, 525 W. Tennessee St., Clifton, N. J., and Mary St., and Howard E. Wilkins, 1212 Mary St., all of Evansville.

New York—Aero Signs Inc., New York; aircraft of all kinds for the purpose of advertising; 200 shares, n.p.v. Francis J. Nicosia, 105 Court St., Brooklyn.

Texas—Plainview Flying Club, Plainview; airplanes. Incorporators: H. V. Hull, Jr., Brents Norman and E. K. Huftedier, Jr.

Virginia—Norfolk Flying Service Inc., Norfolk; to deal in airplanes and operate an airport; maximum capital, \$15,000. C. F. Spencer, Norfolk, president. A. Herbert Foreman, attorney, 619 Western Union Bldg., Norfolk.

Va., and Edward F. Andrews, Chicago, Ill.

2,172,334: Sustaining rotor for aircraft. Theodore Theodorsen, Hampton, Va., and Edward F. Andrews, Chicago, Ill.

2,172,368: Recording pitchometer. Ivan D. Eby, Philadelphia, Pa.

2,172,370: Slot foil aircraft wing. Delmer S. Fahrney, U. S. Navy.

2,172,522: Safety breather for aircraft engines. Lloyd C. Silne, San Diego, Cal.

2,172,541: Engine. Andre J. Meyer, Lexington, Ky., assignor to Continental Motors Corp., Detroit, Mich.

2,172,694: Aneroid altimetric device with a high amplitude for aircraft. Roger Blondelle, Paris, France.

2,172,729: Centrifugal breather. Roland Chilton, Ridgewood, N. J., assignor, by meane assignments, to Wright Aeronautical Corp., Paterson, N. J.

2,172,741: Crankshaft torsion damper. Wilton G. Lundquist, Glen Rock, N. J., assignor to Wright Aeronautical Corp., Paterson, N. J.

2,172,813: Control for airplane vehicles and ground steering gear therefor. Waldo Dean Waterman, Santa Monica, Cal.

2,172,932: Variable pitch propeller. Edmund B. Cairns, Naugatuck, Conn., assignor, by meane assignments, to Cairns, Corp., New York, N. Y.

2,173,012: Airplane motor. Allen J. Dence, Binghamton, N. Y.

(Persons desiring complete copies of patents listed should write to Commissioner of Patents, Dept. of Commerce, Washington, D. C. Price is 10¢ per patent.)



THE BEST LOCATION IN NEW YORK

Persons accustomed to the luxury and comfort of air travel are attracted by a certain difference in the atmosphere and service of the . . .

HOTEL NEW WESTON

Madison Ave.
at 50th Street

Single \$5.00 Double \$8.00
Suites \$12.00

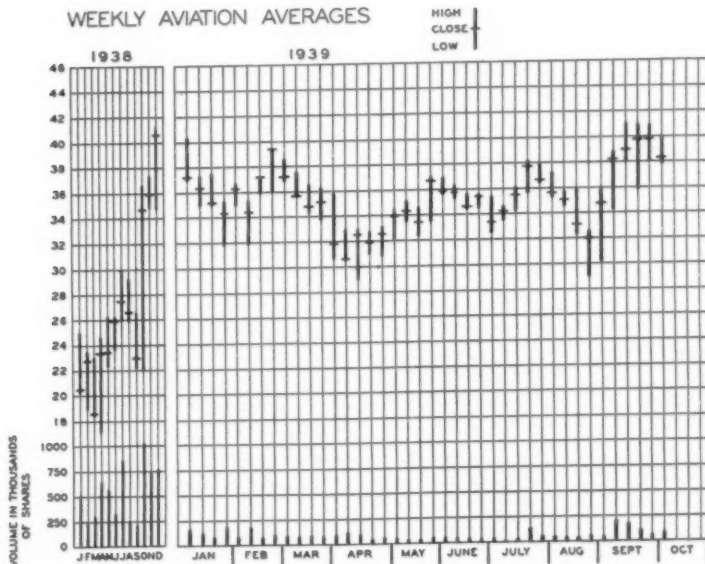
NEW YORK STOCK EXCHANGE

Week Ended Sept. 30				Week Ended Oct. 7			
	High	Low	Net Change	Sales	High	Low	Net Change
American Airlines	32 1/4	31 3/4	+ 3/4	800	34 1/2	30 1/2	+ 2 1/2
Aviation Corp.	6 1/2	5 3/4	+ 1/4	29,100	6 1/4	5 3/4	+ 1/2
Bendix Aviation	30 1/4	28 1/4	+ 1/2	21,400	29 1/4	28	+ 1 1/2
Boeing Airplane	28	25 3/4	+ 1/2	14,100	27 1/2	25 3/4	+ 1 1/2
Consolidated Aircraft	27 1/4	25 1/4	+ 1/2	17,300	26 3/4	24 1/4	+ 1 1/2
Continental Motors	3 1/2	3	+ 1/2	68,200	3 1/4	2 7/8	+ 1/2
Curtiss-Wright	7 3/4	6 1/2	+ 1 1/2	75,700	7 1/2	6 3/4	+ 1 1/2
Curtiss-Wright A	27 1/2	25 3/4	+ 1 1/2	7,700	26 1/2	25	+ 1 1/2
Douglas Aircraft	78 1/2	74	+ 1 1/2	13,200	77 1/2	73 1/2	+ 1 1/2
Eastern Air Lines	18 1/2	17 1/4	+ 1/4	8,300	18 1/4	16 3/4	+ 1 1/2
Ex-Cell-O	24 1/2	23	+ 1 1/2	4,800	24 1/2	22	+ 1 1/2
Glenn L. Martin	38 1/4	35 1/2	+ 1 1/2	23,900	38 1/4	34	+ 1 1/2
Natl. Aviation Corp.	13	12	+ 1/2	5,800	12 1/2	11	+ 1 1/2
N. American Aviation	21 1/2	20 1/4	+ 1/4	60,300	21 3/4	19 3/4	+ 1 1/2
Pan American Airways	16 3/4	15 3/4	+ 1/2	4,900	15 3/4	15	+ 1/2
Sperry Corp.	49 3/4	46 3/4	+ 1 1/2	15,500	48 3/4	46 1/2	+ 1 1/2
Thompson Products	28 1/4	27	+ 1 1/2	2,400	27 3/4	26 1/2	+ 1 1/2
TWA	10 1/4	9 1/2	+ 1/2	4,300	9 1/2	9 1/2	+ 1/2
United Aircraft	45 1/4	41 3/4	+ 1 1/2	18,600	44 1/2	41 1/2	+ 1 1/2
United Air Lines	11 3/4	10 3/4	+ 1/2	16,400	10 3/4	10 1/4	+ 1/2
Wright Aeronautical	112	109	+ 3	90	112	109	+ 3

NEW YORK CURB EXCHANGE

Week Ended Sept. 30				Week Ended Oct. 7			
	High	Low	Net Change	Sales	High	Low	Net Change
Aero Supply A	20	19	+ 1	300	20	19	+ 1
Aero Supply B	4 1/2	4 1/4	+ 1/4	1,900	4 1/2	4 1/4	+ 1/4
Air Associates	8 3/4	8 1/2	+ 1/2	300	8 1/4	8 1/2	+ 1/4
Air Investors	2 1/4	2	+ 1/4	700	2	1 3/4	+ 1/4
Air Investors cv pf	16 1/2	16 1/2	+ 1/2	100	16 1/2	16 1/2	+ 1/2
Air Investors war	3 1/2	3 1/2	+ 1/2	800	3 1/2	3 1/2	+ 1/2
Aviation & Transp.	3 1/2	2 3/4	+ 1/2	7,700	2 1/2	2 3/4	+ 1/2
Beech Aircraft	9 3/4	8 1/2	+ 1 1/2	9,000	10 1/4	9	+ 1 1/2
Bell Aircraft	24 1/4	23	+ 1 1/2	2,600	23 1/2	21 1/2	+ 2 1/2
Bellanca Aircraft	8 3/4	7 1/4	+ 1 1/2	3,500	8	7	+ 1 1/2
Breeze Corps	7	5 1/2	+ 1 1/2	1,900	6 3/4	6	+ 1 1/2
Brewster Aero	8 1/4	7 1/2	+ 1 1/2	6,500	8 1/4	7 1/2	+ 1 1/2
Canadian Colonial	5 3/4	5 1/2	+ 1 1/2	1,200	5 3/4	5 1/2	+ 1 1/2
Fairchild Aviation	11 1/4	10 3/4	+ 1/2	2,000	11	10 3/4	+ 1/2
Grumman Aircraft Eng.	17 1/4	16 1/2	+ 1 1/2	4,900	17	16 1/4	+ 1 1/2
Irving Air Chute	22 3/4	20 3/4	+ 1 1/2	5,500	21 1/4	20 1/4	+ 1 1/2
Lockheed Aircraft	29 1/4	27	+ 1 1/2	9,600	29 1/2	27 1/2	+ 1 1/2
Penn.-Central Airlines	8 3/4	8 1/2	+ 1/2	400	8 1/2	8 1/2	+ 1/2
Sears Aircraft	5 1/4	4 1/2	+ 1 1/2	18,700	5	4 1/2	+ 1 1/2
Waco Aircraft	5	3 1/2	+ 1 1/2	400	5	3 1/2	+ 1 1/2
Western Air Express	4	3 1/4	+ 1/2	1,600	4	3 3/4	+ 1/2

WEEKLY AVIATION AVERAGES



Howard Aircraft Stock

Dempsey-Detmer & Co. and Paul H. Davis & Co., Chicago, have agreed to purchase total of 73,940 shares of Howard Aircraft Corp. stock at \$2.50 a share, other underwriters taking portions of the total. If 100,000 shares were not sold by Oct. 1, purchasers were to receive 90% of the purchase price. A sum of 110,862 from previous sales, is now in escrow.

Arctic Transport Service

Arctic Transport Service, operating three planes in Alaskan territory, were based at Seward, Alaska, starting in August. A. Alken, proprietor head of the service said recently, announcing that a 3-year lease for the field hangar had been signed. Veteran pilot for the company, Don Emmons, was formerly manager of Mueller-Harkins Airport, Tacoma, Wash.

STOCK COMMENTS

Chart Data Supplied by Wyckoff Associates Inc., Comments by Philip P. Friedlander

What will happen to stock prices if the nations now engaged in conflict decide to call a halt to their activities and sit down to a table to solve their complex international problems?

This is a paramount question to those seeking a place for idle funds either in investment or speculative fields. The uncertainty that now surrounds the situation calls for caution, and the market-place witnesses small transactions and slightly lower stock prices. The trader who has studied market maneuvers for a long period of time realizes that at this stage a base for a major move is being formed again. It is said by many that the market takes only a few days or weeks to complete a sensational move, but before that particular move occurs quite a long time is spent in building up for it. Stock prices generally have experienced quite an advance and a set-back is entirely within the realm of technical propriety. Even though the news is such as to call for hesitation, there is a feeling that this would have occurred anyway if there had been no talk of peace.

And what about aviation stocks? During the past six weeks, the averages have climbed from a low of 29.06, during the week of Aug. 26th, to a high of 41.00 during the week of Sept. 16th. Within the area of 35.83 to 41.00 the averages have backed and filled recently. This maneuver served to build up a large line around 40. At the present writing the set-back is of small consequence and unless the averages retreat to 35 there is a likelihood that a sensational move on the upside is entirely probable. If the averages, regardless of the reason, break to 35 on sizable volume, the retreat could carry to 32 and then 28. At the level of 32 there is a small cushion that might serve to stem the tide of a downswing. At this point there is no way of determining in which direction the big move will come. This is problematical. There are too many elements to feel secure in predicting price changes based entirely on the war situation.

We have a feeling that aviation stocks have not yet completed a move mapped out for them earlier in the year. Though delayed, it may still develop.

Zone Traffic Grows

During the fiscal year of 1939 there were 8,810 air passengers entering or leaving Panama Canal Zone compared with 2,059 in 1933 and 7,934 in 1938, according to a report from Ashley B. Sewell, acting commercial attache at Panama City. Air shipments increased from 3,733 lbs. in 1933 to 286,171 lbs. during the last fiscal year.

War Dept. Releases
Actual Amounts of
Aircraft Contracts

The following contracts, totaling \$58,585,061, based on previously announced tentative awards, have been entered into with the manufacturers listed below and in the actual amounts indicated, it was announced recently by the War Dept. As stated in previous issues, the contracts have been awarded to certain winners of the design competitions conducted under the provisions of the Air Corps Act of July 2, 1926.

Stinson Div., Aviation Manufacturing Corp., Wayne, Mich., type O-49 observation planes, \$1,853,451.

Bellanca Aircraft Corp., New Castle, Del., type Y0-50 observation planes, \$181,693.

Ryan Aeronautical Co., San Diego, Cal., type Y0-51 observation planes, \$132,020.

Glenn L. Martin Co., Baltimore, Md., type B-26 bombardment planes, \$16,125,586.

North American Aviation Inc., Inglewood, Cal., type B-25 bombardment planes, type AT-1 advanced training planes and type BT-14 basic training planes, \$13,049,801.

Stearman Div., Boeing Airplane Co., Wichita, Kan., types PT-13B, PT-18 and PT-17 primary training planes, \$2,843,405.

Vultee Aircraft Div., Aviation Manufacturing Corp., Downey, Cal., type BT-13 basic training planes, \$3,029,036.

Consolidated Aircraft Corp., San Diego, Cal., type B-24A bombardment planes, \$8,613,674.

Boeing Aircraft Co., Seattle, Wash., type B-17C bombardment planes, \$8,102,892.

Lockheed Aircraft Corp., Burbank, Cal., type F-39 pursuit planes, \$4,653,703.

CLASSIFIED ADS

7¢ per word—minimum charge \$1.00—Payable in advance

FRANK AMBROSE, INC.

Dealers and Exporters

Airplanes, Engines, Part Supplies

Office: Whitestone, New York.

Storeroom: Roosevelt Field, Mineola, N. Y.

* AIRCRAFT HULL · AIRCRAFT LIABILITY · PERSONAL ACCIDENT *

AVIATION INSURANCE

adaptable to every form of risk
incurred by owners or operators
of aircraft, hangars or airports

ASSOCIATED AVIATION UNDERWRITERS

90 JOHN STREET, NEW YORK 215 WEST 7th STREET, LOS ANGELES

* COMPENSATION · AIRPORT LIABILITY · AIRPORT PROPERTY DAMAGE *

SUNCOOK MILLS
LEADING MANUFACTURERS
OF FABRIC AND
TAPES FOR THE
AIRCRAFT INDUSTRY



FLIGHTEX



40 WORTH STREET, NEW YORK
Export Representative—
Aviation Equipment & Export
Inc., 25 Beaver St., N. Y.
Cable Address—"Aviquip"

WORLD'S PREMIER FLIGHTEX FABRIC AIRPLANE FABRIC

Fortnightly Financial Review

Developments at the Securities & Exchange Commission during the past fortnight again were concentrated on routine amendments to registration statements which had been previously filed, and current reports required after every revision in capital or managerial status of a firm which has ever filed under the Securities Act of 1933 or the Securities Exchange Act of 1934. Up to Oct. 8 no statement for new stock had been filed in the period.

The fortnightly summary follows:

Northrop Aircraft Inc.

Northrop Aircraft Inc. lists changes following registration recently of its statement covering 400,000 shares Class A common \$1-par stock and warrants for 80,000 shares, offered in units of 5 shares of stock and a warrant for purchase of 1 share all at a price of \$30. Warrants will entitle purchase of shares within 5 years at \$7 per share or 80% of book value, whichever is higher. Latest list of underwriters (as of Sept. 1) follows: Hartley Rogers, Torrey & Co., which firm has assumed obligations of Hartley Rogers, Lyon & Co. as an underwriter; Cohu Bros. & Georgeson, although legally dissolved as of Sept. 1, will continue as an underwriter; Banks, Huntley & Co.; Air Investors Inc.; Lester & Co.; O'Brien, Potter & Co.

The underwriters will purchase any pay for the underwritten units (200,000 shares and public warrants for 40,000 shares) as follows: 20,000 units (20,000 shares and public warrants for 20,000) on or before July 31, 1939; 5,000 units (25,000 shares and public warrants for 5,000) on or before the expiration of each 30 days thereafter until full amount of underwritten units shall have been purchased. Former clause permitting underwriters' withdrawal on opinion of market or other conditions has been eliminated.

Atlas Corp. has agreed to purchase from underwriters 6000 underwritten units (30,000 shares & public warrants for 6000) at cash price of \$25 per unit to be delivered and paid for in lots of 1500 units each on or before expiration of 30-day intervals commencing by Aug. 31, 1939. Atlas is to receive underwriters' warrants for 25,000 shares and the right to purchase agency stock at \$25 per unit in quantities equal to quantities of such agency stock purchased by underwriters for their respective accounts or sold to others.

Aircraft Accessories Corp.

Aircraft Accessories Corp. in revised report estimates net proceeds of sale of 80,000 shares of its Class A 50c par capital stock at \$120,000, plus approximately \$30,000 from exercise of options (covering 20,000 shares) held by officers and directors. The 20,000 shares will not be offered public. Eldred, Potter & Co., principal underwriters, will offer the 80,000 shares to public at \$3.50, of which \$1.50 will represent net proceeds to registrant. As of Sept. 20 unfilled orders in hydraulic equipment by parent company was \$4,436.00; orders for items handled as sales agent were \$5,225.68. Backlog of Kansas City subsidiary, Thos. L. Siebenthaler Mfg. Co., was \$28,069.41 on Sept. 9. In the past few months subsidiary and parent together have bid on approximately \$4,000,000 of hydraulic and miscellaneous equipment to aircraft manufacturers, military services, etc., and some contracts are expected.

Thompson Products Inc., announces the stated capital represented by the 28,945 outstanding shares of \$5 cumulative convertible preferred, no par, has been increased from \$2,829,500 to \$2,894,500, so that each outstanding share is now represented by \$100 stated capital. To effect such increase, a \$65,000 item was transferred on books from capital surplus to stated capital applicable to such shares. Company also has transferred \$166,190.56 item from earned surplus to capital surplus.

W. L. Maxson Corp., manufacturers of bomb sights, computing and control mechanisms, etc., by agreement dated Sept. 22, has extended the period that F. Eberstadt & Co. may purchase certain shares from registrant and W. L. Maxson, from 90 days after effective date of registration to 150 days. The original prospectus is dated June 26.

Transair Corp. has filed application to defer effective date of its registration statement covering 250,000 no par shares.

Aviation Corp. reports that as of Sept. 27 there were outstanding 3,703,667 \$3 par shares of its capital stock. On June 22 total of 925,917 shares were offered at \$3.30 to record holders. Aviation & Transportation Corp., purchased its pro rata total, 275,124 shares, thus increasing its holdings to 1,100,496. Of the remaining 650,793 shares underwritten at \$3.30, 513,252 were purchased by 5 stockholders or warrant holders, and the remaining 137,541 shares were sold to underwriters at \$3.00.

Brewster Aeronautical Corp. as of Sept. 15 had received \$40,150 for the issuance of 7300 capital shares upon exercise of warrants. Warrants for 59,050 shares, for issuance to officers and employees other than James Work, president, now are outstanding. (In 1937 total of 75,000 shares was reserved against warrants; warrants for 50,000 shares were issued about Apr. 13, 1937, and warrants for 16,350 were issued prior to Dec. 20, 1938. Expiration date is Apr. 1, 1942.)

David Van Alstyne Jr., shown as director on prospectus of Feb. 17, is not thus shown on Sept. 28 prospectus. For 6 months ended June 30, gross sales to U. S. government were \$72,703.58 and to other customers \$162,586.95, with net sales for period \$235,056.37. Loss from operations was \$31,856.53; net loss was \$33,931.36. Shown on books for period was sum of \$304,517.80 development costs on experimental plane and on big proposals, cost of working drawings, tools, jigs, fixtures, etc., transferred to deferred accounts for future amortization.

Financial Reports Received

Fairchild Aircraft Ltd., Longueuil, Que., in year ended June 30 reports operating profit of \$118,114.89 before provision for loss on inventory of and amortization of development of the Sekan model, and depreciation. After such charges net profit was \$28,060.31. Report of H. M. Pasmore, president, expresses belief that major part of the contract for 18 Bristol bombers being built for Canadian government will be completed early next year. "A substantial volume of orders for replacement parts, overhaul work, and repairs" was handled during the year, along with an order for 6 Lockheed 14s, placed through the company by Trans-Canada Air Lines.

Agreement for sale of \$150,000 principal amount of 5% convertible notes to Collier, Norris & Henderson, Ltd., is announced, principal to be repayable in installments: 40% Oct. 1, 1941, and 20% on Oct. 1 of the years 1942, 1943, 1944. Notes are to be convertible into present shares of the firm on basis of 20 shares for each \$100 principal amount unpaid at conversion. Upon payment for the notes, Collier will be granted option to purchase total amount of 12,000 shares at \$5.00 each up to Oct. 1, 1940, and \$6.00 each from that date to Oct. 1, 1941. Proceeds will be used for plant expansion and working capital.

Total assets as of June 30 were \$1,034,813.45, with current assets \$44,074.75, cash \$15,620.60. Current liabilities were \$454,813.45. Deferred liability item of \$83,000 representing agreement for subscription to capital stock of Canadian Associated Aircraft Ltd. is shown.

Literature Available

American Optical Co., Southbridge, Mass., has announced its new industrial safety equipment catalog which describes eye, head and lung protective equipment and the company's line of safety clothing.

Chandler-Evans Corp., South Meriden, Conn., has prepared a bulletin with reference charts on Ceco aircraft fuel pumps.

Continental Machines Inc., 1301 Washington, Ave. South, Minneapolis, Minn., is distributing descriptive material on the new Doall 26 for internal & external contour sawing and band filing.

Dean W. Davis & Co. Inc., 545 W. Fulton St., Chicago, Ill., has issued a catalog featuring custom-built solenoids, coils and transformers.

Despatch Oven Co., Minneapolis, Minn., has issued bulletin 74 with information on design & construction of the new Despatch heavy duty indirect air heater.

Elastic Stop Nut Corp., 1015 Newark Ave., Elizabeth, N. J., has ready for distribution its 1939 catalog and data book.

General Electric Co., Schenectady, N. Y., has issued the following publications: GEA-2997A, on air circuit breakers; GEA-3081B, on low-current arc welders; and GEA-3042A, on automatic arc-welding equipment.

Temporary Manager Named

Knapp Brown of Sioux Falls, S. D., has been appointed temporary manager of Sioux Falls Municipal Airport.

SEC Releases Sperry Corp. Figures; Remuneration of Officers Revealed

The SEC "has determined that disclosure is in the public interest" and has released figures submitted to it by Sperry Corp. and wholly owned subsidiaries as part of the annual report for the year ended Dec. 31, 1938. Parts of the consolidated income account, and aggregate remuneration of certain officers comprised the confidential sections of the docket.

Subsidiaries covered are Sperry Gyroscope Co. Inc., Waterbury Tool Co., Vickers Inc., Intercontinent Corp., Ford Instrument Co. Inc. and Sperry Securities Corp. However, on July 29, 1938, Intercontinent Corp. was partially liquidated by Sperry Corp., and it ceased to be a Sperry subsidiary. Sperry as of Dec. 31 owned none of Intercontinent's outstanding shares.

Aggregate remunerations of officers are revealed as follows (for the year):

Thomas A. Morgan, director & pres. of parent; director & board chairman of Sperry Gyroscope Co. Inc., Waterbury Tool, Vickers, Intercontinent; director & services for Ford; director of Sperry Securities—\$99,081.87.

John Sanderson, director, v.-p., treas. of parent, Intercontinent; director & pres. of Sperry Securities; director, secy., treas. of Vickers; director & for services for Sperry Gyroscope; director of Ford and Waterbury Tool Co.—\$44,071.91.

Thomas B. Dole, director, v.-p., Ford, Vickers; director of parent, Sperry Gyroscope, Sperry Securities, Waterbury, Intercontinent—\$44,071.91.

Harry F. Vickers, pres. of Vickers & Waterbury, (including bonuses, etc.)—\$194,332.22.

William D. Pawley, pres. of Intercontinent Corp.—\$132,504.21.

Sperry Corp. consolidated income account, year ended Dec. 31, 1938:

Net shipments & amounts invoiced on uncompleted contracts, \$25,303,951.66. Deduct, contracts in progress at 12-31-37, representing percentages of sales prices based on the extent completed, less amounts invoiced, \$1,229,785.94 (\$24,074,165). Add, contracts in progress 12-31-38, representing percentages of sales prices based on extent completed, less amounts invoiced, \$1,325,073.68 (\$25,399,239.40). Manufacturing, engineering & other costs (exclusive of depreciation) & cost of materials & finished goods purchased from others, \$16,296,176.92 (\$9,103,062.48). Provision for adjustment of profits on contracts on limited profit basis, \$40,000 (\$90,063,062.48). Income from patent royalties, \$269,357.96. Commission, \$171,695.05.

Gross income from operations before depreciation, \$9,504,115.49. Expenses: depreciation \$346,212.92; selling, general & administrative, including provision for franchise & capital stock taxes, \$2,485,962.83; research and development, \$546,527.15; provision for doubtful accounts \$2,604.12; operating income—\$6,122,808.47. Other income: dividends \$8,100; profit on liquidation & sale of Intercontinent Corp. \$162,043.35, and

other items, to total \$272,882.79. Other deductions, \$61,940.40. Net income before income taxes, \$6,333,750.86. Provision for federal income taxes \$1,145,946.33; provision for English income tax \$226,406.75. Net income, \$4,961,397.78.

Consolidated balance sheet for Dec. 31, 1938, shows assets \$16,989,855.91; current assets \$12,984,184.17 cash of \$3,716,309.03. Current liabilities \$4,581,596.76. Reserve for unrealized appreciation of foreign exchange \$9,846.46. Capital: authorized 2,500,000 shares of \$1 par capital stock; issued & outstanding 2,015,565. Surplus: capital \$4,334,246.20; earned \$5,977,419.71. Income from dividends (cash) \$2,378,000.

Voting trustees are George N. Armsby, director of parent & subsidiaries; J. Cheever Cowdin, director of parent & subsidiaries; Fred J. Fisher, director of parent & subsidiaries; E. A. Pierce, director of all companies; Thomas A. Morgan, director of all companies.

Stock Holdings

Following is official summary of transactions and holdings of officers, directors and principal stockholders of companies with equity securities registered, filed with the SEC Aug. 11 to 31. Unless otherwise indicated transactions were made in July and holdings are as of the end of that month:

American Airlines Inc. common—A. G. Carter, director, acquired 1,200 in Jan. 1939, 500 in February, 200 in May and 800 in June, holding 5,900 at end of that month.

Aviation Corp.—W. H. Beal, officer & director, increased common 333 to 1,333 through exercise of rights and exchanged all of 1,000 common rights. L. I. Hartmeyer, officer, increased common 35 to 135 through exercise of rights and exchanged all of 100 rights.

Continental Motors Corp. common—W. R. Angell, officer and director, increased 7,100 in June 1937, through distribution, and decreased 1,100 in July 1939, holding 22,200; through Midland Corp. (property interest not shown) distributed all of 7,100 in June 1937.

Seversky Aircraft Corp. common—A. P. deSeversky, director, increased 5,000 in Jan. 1937, decreased 1,500 in May, 4,000 in June of which 3,000 was in settlement of claim, 2,000 in August, 3,000 in Sept. 1937, and bought & sold 200 in July 1939, holding 73,729 at end of that month.

Thompson Products Inc.—A. T. Colwell, officer and director, holds 1,100 common and acquired 15 \$5 convertible prior preferred, holding that amount. Transcontinental and Western Air Inc. common—Leland Hayward, director, holds 1,600 directly; through Leeward Royalties Inc. (property interest not shown) increased 1,000 to 2,700.

United Aircraft Corp., common—J. Reed Miller, officer, decreased 250 to 230.

Western Air Express common—Thomas Wolfe, officer and director, increased 375 through management purchase plan, holding 3,375.

Contractors to the United States
Army, Navy and Coast Guard,
and Aircraft Engine
Builders . . .



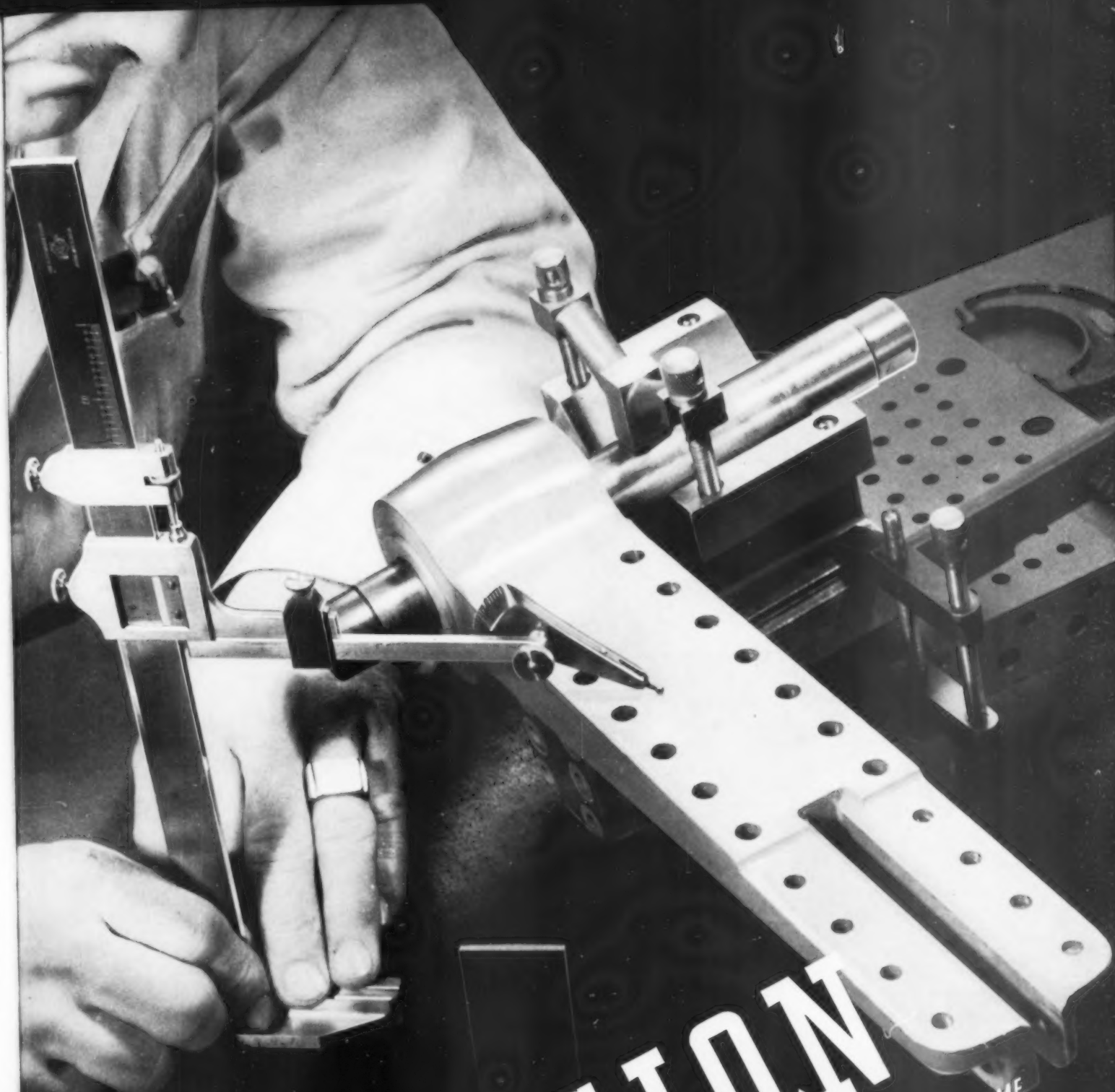
MICA INSULATED
SPARK PLUGS

THE BG CORPORATION

136 W. 52nd St.

New York

of
s,
al
O.
-
t;
at
r,
A.
A.
00
in
00
er
to
nd
ts.
m-
of
ts.
n-
gh
in
gh
not
in
-
sed
in
was
ag-
ght
33.-
col-
100
ble
nt.
Air
ec-
Le-
rest
J
to
n-
in-
ur-



PRECISION

MANUFACTURE OF MILITARY AIRCRAFT  IN VOLUME
NORTH AMERICAN AVIATION INC.
LOS ANGELES MUNICIPAL AIRPORT, CALIF.

TACA

CHOOSES LOCKHEEDS

Transportes Aereos Centro-Americanos (TACA) operating throughout Central America, links the principal cities of Guatemala, British Honduras, Salvador, Honduras, Nicaragua and Costa Rica... flying over rugged terrain, utilizing limited airport facilities... surmounting natural handicaps comparable to those of famous Trans-Canada Air Lines.

Like Trans-Canada, one of the 29 world airlines flying Lockheed all-metal, twin-engine airplanes, TACA has now chosen Lockheed transports for this assignment.

TACA has been operating since 1931. Its equipment must not only provide dependable performance and easy maneuverability, but assure profitable operation... and the placing of this order for five transports is a tribute to Lockheed's advanced design and modern construction methods.

LOCKHEED AIRCRAFT CORPORATION



Burbank, Calif. • Representatives Throughout the World



LOOK TO LOCKHEED FOR LEADERSHIP



P

XUM